

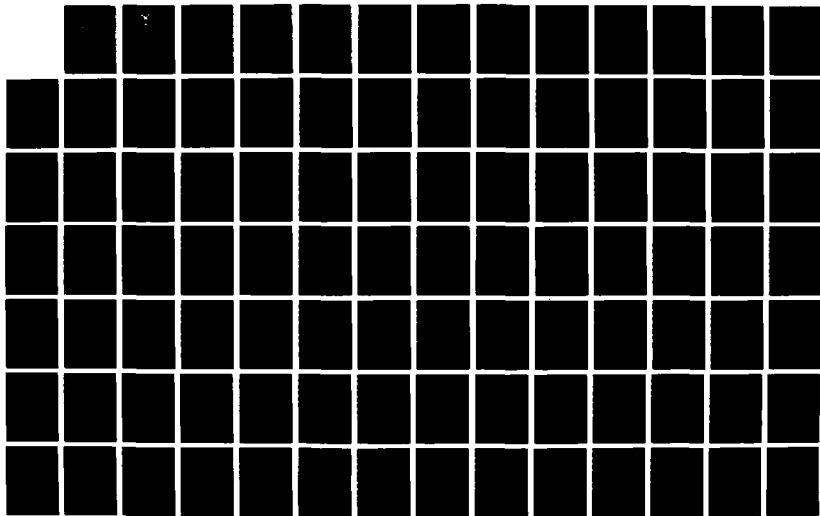
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SUPPLY HOTLIST REPORT GENERATION FOR FLEET BALLISTIC
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SUPPLY HOTLIST REPORT GENERATION FOR
FLEET BALLISTIC MISSILE SUBMARINE
MANAGEMENT MEETINGS

THESIS

Claire C. Smith, B.S.
Lieutenant Commander, Supply Corps, USN

AFIT/GLM/LSM/87S-70

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SUPPLY HOTLIST REPORT GENERATION FOR
FLEET BALLISTIC SUBMARINE MANAGEMENT MEETINGS

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Systems and Logistics

Claire C. Smith, B.S.

Lieutenant Commander, Supply Corps, USN

September 1987

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Preface

The purpose of this study was to develop a software program for implementation in the SUBSAT and ROVSS offices of U.S. Navy FBM Submarine Tenders. Experience on this type of ship helped me recognize the value of such a program in meeting the frequent critical deadlines typical of that environment.

Several software programs were critical in the preparation of both the program, and the thesis document. Programming was done with the help of the Ashton-Tate™ dBASE III PLUS™ data base management program. Additionally, I wish to thank the WordPerfect Corporation people for the many hours of assistance they provided over the phone in making their WordPerfect™ word processing program dance to the tune of the AFIT Style Guide.

In researching and writing and programming the software for this thesis, I have had help from several people. I wish to thank my thesis advisor, Lieutenant Colonel B. Christensen, for believing in the final product, even before it was produced. I thank the Commanding Officer and staff of the Polaris Missile Office, Atlantic for software and distribution support. Thanks also go to my fellow students, Royal Australian Air Force Squadron Leaders M. Cassidy and G. Tasker, and Flight Lieutenant K. Gutterson, USAF Majors A. Yaskin and D. Willeck, and the rest of the Australian student body, for technical and morale support. Finally, I wish to thank my husband, Rick for the faith and support he provided that was strong enough to be felt from the other side of the world.

Claire C. Smith

Table of Contents

	Page
Preface	ii
List of Figures	v
List of Programs	ix
Abstract	xi
I. Introduction	1
General Background	1
Management Information Systems	2
Specific Problem	4
Importance of Research	5
Research Objectives	5
Research Questions	6
Limitations	6
Assumptions	7
Thesis Organization	7
II. Methodology	9
Objectives	9
Definition of DBMS Requirements	10
Interviews	10
Design and Development of DBMS	12
Field Test	12
Validation	13
III. Findings and Discussion	14
Other Systems	14
Adaptability of Other Systems	16
Use of Available Technology and Equipment	16
Software Identification	17
Development Criteria	18
Reporting Requirements	19
Needs of the Operator	22
System Paradigm	22
IV. Program Documentation	25
Program Organization	25
Introduction	26
Main Menu	29

	Page
Change or Add to Records in a Data Base	32
Change or Add to Records in HOTLIST	35
Change or Add to Supply Status Records	45
Change or Add to Activity Code Records	52
Change or Add to Unit Identification Code (UIC) Records	59
Remove or Replace Records in a Data Base	66
Remove or Replace Records in HOTLIST	69
Remove or Replace Supply Code Records	76
Translate Supply Codes To Plain English	88
Print Reports	93
Supporting Programs	109
Program Utilities and Operating Aides	110
Installation	110
Operation	111
Removal	111
V. Conclusions and Recommendations	113
Conclusions	113
Recommendations	114
Other Applications	114
Interface Opportunities	115
Customer Support	116
Implementation	117
Appendix A: Program Coding	118
Appendix B: Glossary of Acronyms	146
Appendix C: Definitions of Terms	148
Appendix D: Interview Questions	150
Interview Questions for Supply Officers	150
Interview Questions for Repair Officers	150
Interview Questions for Submarine Engineering Officers	151
Appendix E: Desk Guide	152
Bibliography	159
Vita	161

List of Figures

Figure	Page
1. Organization of HOTLIST Report Program	25
2. Introductory Screen	26
3. Rights and Warranties Screen	27
4. STARTUP.prg Flow Chart	28
5. Main Menu Screen	29
6. MAINMENU.prg Flow Chart	31
7. DATACHG.prg Change Data Base Selection Menu	32
8. DATACHG.prg Organization	33
9. DATACHG.prg Flow Chart	34
10. Requisition Date Query Screen	35
11. Requisition Serial Query Screen	36
12. Requisition Not Found Screen	37
13. HOTLIST Data Input Screen	38
14. Requisition Inactive Screen	39
15. HOTLIST Data Update Screen	40
16. HOTLIST Input Verification Screen	41
17. HOTCHG.prg Flow Chart	42
18. Status Code Query Screen	45
19. Status Code Not Found Screen	46
20. Status Code Input/Update Screen	47
21. Status Code Inactive Screen	48
22. STATCHG.prg Flow Chart	49
23. Action Activity Code Query Screen	52
24. Action Activity Code Not Found Screen	53

	Page
25. Action Activity Code Input/Update Screen	54
26. Action Activity Code Inactive Screen	55
27. ACTYCHG.prg Flow Chart	56
28. UIC Query Screen	59
29. UIC Not Found Screen	60
30. UIC Input/Update Screen	61
31. UIC Inactive Screen	62
32. UICCHG.prg Flow Chart	63
33. DATADEL.prg Remove/Replace Records Selection Menu	66
34. DATADEL.prg Organization	67
35. DATADEL.prg Flow Chart	68
36. Requisition Date Query Screen	69
37. Requisition Serial Query Screen	70
38. Requisition Not Found Screen	71
39. HOTDEL.prg Record Inactive Screen	72
40. HOTDEL.prg Record Active Screen	73
41. HOTDEL.prg Removal Completed Screen	73
42. HOTDEL.prg Flow Chart	74
43. Status Code Record Input Screen	77
44. Action Activity Record Input Screen	77
45. UIC Record Input Screen	78
46. Status Code Record Not Found Screen	78
47. Action Activity Record Not Found Screen	79
48. UIC Record Not Found Screen	79
49. Status Code Record Inactive Screen	80

	Page
50. Status Code Reactivate Verification Screen	80
51. Action Activity Record Inactive Screen	81
52. Action Activity Reactivate Verification Screen	81
53. UIC Record Inactive Screen	82
54. UIC Reactivate Verification Screen	82
55. Status Code Record Active Screen	83
56. Status Code Remove Verification Screen	83
57. Action Activity Record Active Screen	84
58. Action Activity Remove Verification Screen	84
59. UIC Record Active Screen	85
60. UIC Remove Verification Screen	85
61. STATDEL.prg, ACTYDEL.prg, UICDEL.prg Flow Charts	86
62. RELATE.prg Entry Screen	89
63. RELATE.prg Module Working Screen	90
64. RELATE.prg Translations Completed Screen	91
65. RELATE.prg Flow Chart	92
66. LISTREPS.prg Organization	93
67. LISTREPS.prg Entry Screen	94
68. LISTREPS.prg Menu Screen	94
69. Sample CO / COMO / UNIT Report	95
70. Sample Repair Department Reports	96
71. Sample Expediter Report	97
72. Sample Stock Check Report	98
73. Sample Inactive Records List	99
74. Printer Check Screen	100

	Page
75. Report Printing Screen	101
76. LISTREPS.prg Flow Chart	102
77. CORPT.prg Flow Chart	104
78. RPRRPT.prg Flow Chart	105
79. EXPRPT.prg Flow Chart	106
80. NIINRPT.prg Flow Chart	107
81. DELRPT.prg Flow Chart	108
82. BORDERS.prg Screen With Sample Overlay	109

List of Programs

Program	Page
STARTUP.PRG	118
MAINMENU.PRG	119
BORDERS.PRG	120
DATAchg.PRG	120
HOTchg.PRG	120
HOTIN.PRG	122
STATchg.PRG	123
STATIN.PRG	125
ACTYchg.PRG	125
ACTYIN.PRG	126
UICchg.PRG	126
UICIN.PRG	128
DATADEL.PRG	128
HOTDEL.PRG	129
HOTSHOW.PRG	130
STATDEL.PRG	130
STATSHOW.PRG	131
ACTYDEL.PRG	132
ACTYSHOW.PRG	133
UICDEL.PRG	133
UICSHOW.PRG	134
RELATE.PRG	134
LISTREPS.PRG	136
CORPT.PRG	137

	Page
COHEAD.PRG	138
RPRRPT.PRG	138
RPRHEAD.PRG	140
EXPRPT.PRG	140
EXPHEAD.PRG	141
NIINRPT.PRG	141
NIINHEAD.PRG	142
DELRPT.PRG	142
DELHEAD.PRG	143
HOTLIST.BAT	144
HLINSTAL.BAT	144
CONFIG.NEW	144
AUTOEXEC.NEW	144
HLREMOVE.BAT	144

Abstract

The purpose of this study was to determine the feasibility of developing a microcomputer based system designed for use by enlisted personnel on-board a U.S. Navy FBM Submarine Tender in producing daily high-priority requisition "Hot List" reports. These reports are used for management of critical repair jobs on FBM Submarines during brief refit periods.

Management personnel from several tenders were interviewed, and a list of requirements, both administrative, and user-oriented, was developed. A software application using dBASE III PLUS™ was then developed, tested, and validated. Coding developed for this program meets or exceeds the needs identified during the interview process, and includes many improvements suggested during testing and validation.

The resulting software program is an easy to install, easy to use, data base report program designed to support all FBM tenders in the Atlantic Fleet. Program operation does not require knowledge of dBASE by the user, and entails almost no training. The program operates on a PC-compatible micro-computer with 384K RAM, one hard disk drive, one 5¼" floppy disk drive, a monitor (monochrome or color), and an 80-column printer capable of using continuous form paper.

Although designed specifically for FBM Tenders, alterations to the software could allow support to a myriad of other facilities, including other types of tenders, Trident Refit Facilities, shipyards, and other repair facilities in the DOD. Improvements in both customer service and supply management could be expected in these arenas through implementation of this program.

SUPPLY HOTLIST REPORT GENERATION FOR
FLEET BALLISTIC MISSILE SUBMARINE MANAGEMENT MEETINGS

I. Introduction

General Background

Fleet Ballistic Missile (FBM) Submarine tenders in the US Navy each have a mission of repairing and upgrading FBM submarines and their components. Each tender provides support for six to twelve submarines, where normally one to three are in port at any one time. The submarines are in-port for only about one month during "refits," and the deployment dates are firm. All repairs must be made during the refit, as the submarines will be deployed underwater for several months with only emergency repair facilities available. FBM submarines receive the highest priorities within the supply system for requisitions of repair parts because of the limited repair time available and the criticality of their missions.

The status of critical requisitions is of concern to many of the supervisory and command personnel, as it may impact on work flow and the completion of required work throughout the refit. During this time the "Ship's Supervisor" for each submarine generates approximately 400 work orders, of which about twenty are classified as critical, or "hot" due to anticipated unavailability of one or more parts by the scheduled start date of the repair job. This poses a very important question: how do those responsible for ensuring timely completion of critical work obtain the required managerial information on urgently needed parts?

FBM submarine Tenders presently have an on-board main frame computer system that is used for a variety of purposes, called the shipboard non-tactical automated data processing program (SNAP). Included in the functions of SNAP are personnel and administrative management, a repair job-scheduling system called the Integrated Maintenance Management System (IMMS), and an automated supply stock inventory system. From this main-frame system, managers can presently obtain information such as chronological listings of upcoming jobs, and on-board availability of required repair parts. The Supply Department of the ship is notified by electronic transmission of the current status of high-priority supply requisitions, but the information is received in hard-copy form, and much of the information is encoded in supply lingo that is often difficult for non-supply personnel, such as those from repair shops, to decipher. In the next few paragraphs, we will look at some alternate possibilities for providing that data to those who must use it (9).

Management Information Systems

The three most important assets of an organization are money, people, and data (22:4). In a Navy environment, the budget is fairly well fixed, and personnel are selected and provided by outside organizations. Efficient and effective management of data, therefore, provides an opportunity to overcome shortcomings in the other two areas. A management information system (MIS) that will assist in the decision making process by collecting, organizing, storing, and correlating the data can support, and sometimes replace other assets that are in short supply (22:5). Such an MIS, which is a collection of data about a subject that can be manipulated by a computer to provide specific information about that subject's attributes can provide that information to a myriad of management levels, a characteristic important to the Navy environ-

ment (13). It is important, however, that the MIS make use of technological developments as they become available, and it must fit the style of the organization and those using it (16:3).

A database, which is a "group of logically related files or data-sets" (16:131), is an appropriate target for a MIS. Computerized database management systems (DBMS) have been used in organizational management in large corporations for over fifteen years (22:5). The recent technological advances in the area of microcomputers has made once-cumbersome databases manageable within a small shop environment. It is this latter step that brings the advantages of the DBMS to the Navy shipboard arena.

The term, database, can have many meanings. In the simplest case, it can mean a list of data on a piece of paper or in a computer file of any type. When it is considered to mean only a list of data, however, there are severe limits to the ways that it can be used. To find information, the user may have to manually look through the whole list, which may not be in a convenient order. If there are data associated with the specific item, record, or file in question in more than one listing, the user may then have to perform another search through the other list or lists. Mathematical relationships between the different listings may also have to be performed manually. This can be both awkward and time consuming, and often leads to errors.

A more complex form of a database involves the implementation of a computer. In this case, the records that make up a file are built of separate fields. These fields are consistent in size (number of characters or digits) and type (numerical, character, date, logical, etc.) for each record. This allows the file to be sorted by any of the fields, and may allow mathematical relationships to be built between separate records within the file. In this

case, the size of a file is usually limited to the size of available random access memory (RAM), and information from other files may still have to be input or related manually.

The most complex database commonly available for both micro computers and larger mini and mainframe computers is the relational database. In this case, the system allows the various database files to "talk" to each other. Large databases that relate through only a single field can be manipulated to appear as one even larger database. Mathematical and associative relations can be built synergistically that provide even more information than is actually contained in the individual files. Additionally, since all files do not have to be in active memory at all times, the size of the databases is limited only by the size of the mass storage device, such as a hard disk (10:1-3).

The MIS tools examined above can be applied to a variety of management applications. The application of concern here is that of resolving the problem of a lack of adequate supply high priority requisition status reports.

Specific Problem

Reports on the status of requisitions for critical jobs are desired by each submarine Commanding Officer (CO), the Tender CO, and each work center in the Repair Department of the Tender, as well as the high-priority expeditor in the Supply Department (2). The various reports are generated on different frequencies, due to the various need of the customers. The reports must be based on the same data base, but require different formats and emphasis (14). Among the Tenders, there is no consistent method or format for producing this vital information in an efficient and usable form.

A fleet-wide standard system is needed which uses available technology and equipment to produce uniform, concise reports quickly and efficiently (19).

Importance of Research

Presently, on one Tender, management reports are produced by supply personnel (who have little experience in word processing) typing required information into a word processor using an awkward and cumbersome software program, then rearranging the information to meet the requirements of each customer. Due to the complex, error-prone, and time consuming nature of the task, non-essential reports, such as a Repair Department breakdown, are presently not produced, resulting in a lower level of customer service than the Supply Department desires to provide (23). On another Tender, the coded supply status reports that are sent to the Tender by the Polaris Missile Office, Atlantic (PMOLANT) are given directly to the customer, in spite of the readability problems for non-supply personnel caused by using supply codes rather than plain language. The reason more generically understood reports are not produced by this tender is the lack of an easy and efficient system to produce such reports (3). A third tender has, in fact, implemented a simple data base management system that allows faster input of data, but still experiences problems in input errors and one single report output format.

Recent decisions to upgrade support equipment onboard FBM submarine tenders have resulted in procurement of IBM-compatible microcomputers and laser printers for each of the Tender supply departments (19). This hardware provides the opportunity to upgrade customer support capability in the area of hotlist reporting to better meet the needs of customers. This leaves the concern of how the new equipment may be best applied to support fleet needs?

Research Objectives

Inherent in the effective utilization of management information system hardware and software is the requirement to identify those needs and goals

one has for the system. In this situation, the needs and goals that were identified included full descriptions of the needs of the customers (such as varying report formats and reporting frequencies) and specification of the level of support to be provided by the Supply Department (which is constrained by available skilled manpower).

Due to the fleet-wide need for a reporting system, the ultimate goal of this thesis is to produce a system that supports those needs.

Research Questions

In order to develop or acquire a report generation system suitable to meet the needs of the FBM Tenders, a series of questions must be answered. Questions considered in this process included, but were not limited to, the following:

1. What systems, report formats, and forms are being used elsewhere in the Navy to meet similar requirements?
2. If systems, report formats, or forms are available, could they be adapted for use here?
3. If there are no adaptable systems available, could a procedure be written that makes use of available technology and equipment?
4. If a new system or procedure is developed using existing computer hardware, what is the most appropriate software basis or foundation?
5. If a new system or procedure is developed, what criterion and concerns must be considered in that development to ensure successful acceptance and implementation in the fleet?

Limitations

This research effort is limited to systems for management of FBM Submarine refits in the Atlantic Fleet. Tenders doing refits of non-FBM submarines, refits of surface ships, and refits in the Pacific Fleet may use similar procedures, but they will be excluded from this study due to numerous specific

differences in shipboard organization, policies, schedule patterns, and customer support objectives.

Furthermore, the intent is not to produce a system that can be used for management of lower priority requisitions, where the number of requisitions would be large and cumbersome, but one more appropriate for carefully controlled higher priority requisitions such as those critical to the submarine refit process.

It is recognized that there are many commercially available software packages that could be considered mechanically appropriate for the purposes of this research. Consideration of software selection has been limited to those available to the Navy through routine supply procedures and policies.

Assumptions

The following assumptions are made in this research:

1. A set of significant requirements of the customers can be developed that applies to all FBM submarines and tenders.
2. The needs identified for the CONUS tenders and submarines may be applied to those homeported out of Holy Loch, Scotland.
3. The necessary software will be available to each of the tenders to allow implementation of the system developed as a result of this research.

Thesis Organization

This research involves development of a software program for use in the fleet, as well as historical and investigative research on management information system applications. Additionally, the Navy terminology may be unfamiliar to some personnel at the Air Force Institute of Technology. As a result, the chapters of this thesis follow a unique pattern:

Chapter	I:	Introduction
Chapter	II:	Methodology
Chapter	III:	Findings and Discussion
Chapter	IV:	Program Documentation
Chapter	V:	Conclusions and Recommendations
Appendix	A:	Program Coding
Appendix	B:	Glossary of Acronyms
Appendix	C:	Definitions of Terms
Appendix	D:	Interview Questions
Appendix	E:	Desk Guide
Bibliography		

II. Methodology

Objectives

In order to meet the research objectives and answer the research questions, the specific needs of the intended customers and system users must be recognized. The desired end product is a microcomputer-based software program on a 5¼" "floppy disk", with training and operating documentation. The program has been designed to be implemented on each FBM submarine Tender for producing reports of critical requisitions tailored to the requirements of each customer.

Investigation of these questions consisted of five steps. The first was a literature review of the history, characteristics, and applications of management information systems and database management systems, both commercially and within the U. S. Navy. This provided both a basis for employing the appropriate type of MIS, and information for selecting the most suitable software package for this application. Second, interviews with the intended key users and customers of the system were conducted to determine their needs. Next, an acceptable system was developed using the selected appropriate software package, and documented. Testing of that system was then performed using Naval Officers familiar with the shipboard and submarine refit environments, followed by validation by a group of management information system experts recommended by the Department Head of the Resource Management Division of the AFIT School of Systems and Logistics.

Definition of DBMS Requirements

A literature review has been integrated into the thesis chapters that involves both traditional library and Navy information investigation, as well as interviews with experts from the submarines and Tenders.

Traditional library research included both library reference and commercial software users manuals and handbooks, as well as review of related theses.

Investigation of MIS and DBMS capabilities and availabilities within the Navy included requests for information from Navy sources such as the Naval Supply Systems Command Contracts Directorate, the Naval Regional Data Automation Center, and the Naval Data Automation Facility.

Interviews were conducted with supply personnel responsible for generating the reports, and with officers in the position of receiving and using the reports.

Research resulting in the requirement to develop a database management system, rather than adapting an existing one, has required that further analysis be done through literature research and considerations of available software to select the most appropriate database management development software package for use in production of this system.

Interviews

Unstructured interviews were selected as the major source of primary data for this research. There are numerous advantages and disadvantages to obtaining data through personal interviews, and, in this case, the pros clearly outweighed the cons.

Disadvantages to using the interview as a source of primary data include the dependency of the quality of information on the willingness of the source

to cooperate, the actual knowledge of the source, communication difficulties between the interviewer and the source, and cost (11:158-159). In this situation, these problems were minimal. The persons being interviewed had nothing to lose, but much to gain (a better management system), and so cooperated gladly. Sources for this information were carefully selected by their experience in the environment where the DBMS is intended to operate, and can be considered experts regarding the needs of that environment. Communication was not a problem, as the interviewer has significant experience in the operating environment and was able to converse in the lingo peculiar to that environment. Due to the limited number of interviews planned, and the availability of the AUTOVON system for conducting those interviews, cost, which is often the biggest problem in personal interviewing (11:161) was not a concern.

The advantages to obtaining data in this manner were significant. The interview, and especially an unstructured personal interview, is quite versatile, and allows abstract information of all types to be gathered by asking only a few carefully selected questions (11:158). Furthermore, the interviewer can have an effect on the quality of the information gathered by explaining questions and probing into areas that may reveal more information (11:164).

Unstructured interviews were conducted with the Supply Officer or his representative, and Repair Officer, or his representative, of each of the three active FBM Tenders on the east coast, with selected Engineering Officers from available FBM submarines, and with specific personnel from the Fleet Polaris Missile Office, Atlantic (PMOLANT) who are involved in the generation of input data or the analysis of performance of the submarine tenders. Interviews with submarine personnel took place with those Engineering Officers whose submarines were in-port at the time the interview process took place.

These interviews served to both identify existing management systems, and to ascertain the functional requirements that the fleet has for such a system. Sample interview questions are shown in Appendix C.

Design and Development of DBMS

A system was then designed by both adapting an existing system, and programming on selected software such that it meets those needs identified in the interviews discussed above. The resulting system is formatted on a 5¼" floppy disk, and is accompanied by documentation sufficient to train and assist personnel who are acquainted with the basic use of a microcomputer in the operation of the program.

The system is designed to accept input of basic supply status data, sort the data in the appropriate order, and send reports in various formats to a connected printer. The reports that result have been designed to meet the needs of those customers supported by the Tender Supply Department, as identified by supply and repair personnel interviewed during the literature review. As a result, after inputting status data, the operator may merge the data base with built-in supplementary data bases to obtain definitions of supply codes input initially with the data. He or she may then select a desired report format. The program will re-sort the data to fit that report's requirements, and the operator may then print the report whenever a specific requirement arises. The system has been designed to operate on a menu-driven basis, walking the operator through the required steps to produce the desired reports.

Field Test

Testing was conducted with Naval officers who had been stationed on-board submarine Tenders in Submarine Supply Assistance Supply Support (SUB-

SAT) and Repair of Other Vessels Supply Support (ROVSS) division officer capacities, to determine both the utilization of the system from the point of management, and the suitability from the point of the sailors who will operate it. Required improvements identified during these procedures were made, and a final validation made by the AFIT experts.

Validation

Validation was made through examination by database management experts at the Air Force Institute of Technology (AFIT). A panel of experts was recommended by an AFIT faculty member who specializes in the area of computer software operation and management. The experts checked the program operation and documentation to determine whether it met the needs determined to be important in the interview portion of the research, and to determine its operability by those designated to use it. Improvements recommended by those faculty members were implemented where possible.

III. Findings and Discussion

In Chapter I, five specific research questions were identified that are considered important in finding a way to meet and fulfill the needs of the fleet. The research undertaken here has answered those questions in the following manner.

Other Systems

Question 1: What systems are being used elsewhere in the Navy to meet similar requirements?

A basic philosophy within the Navy is one of independent operation of commands in areas not requiring higher level management. This often leads to unique, command-specific solutions to identical problems occurring in many different organizations. The Navy has had a Data Automation Command (NAV-DAC) for many years, charged with the mission of coordinating standardized computer hardware and software throughout the Navy. However, applications as minor and specialized as generation of a local report that is not required by statute or regulation are frequently handled on the individual command level, rather than elevated to the NAVDAC level. The case of report generation for standard information, such as the FBM HOTLIST, is no exception.

There are three FBM submarine Tenders currently active in the Atlantic Fleet: USS Hunley (AS 31), USS Holland (AS 32), and USS Canopus (AS 34). Each of these Tenders generates its HOTLIST through a different technique. The USS Hunley provides the encoded HOTLIST received from PMOLANT to the users with no modifications, changes, or updates (3). USS Holland personalizes the HOTLIST and updates it by writing the information into a word processing file. This is a process which tends to be cumbersome and error-prone, but provides the advantage of being able to add locally-identified updates and

decode some supply codes (23). USS Canopus takes the updating a step further by inputting information into a simple data base file, somewhat easing production of their personalized report, but still risking many types of input errors (2).

Among other activities performing REFIT job management with a similar process, other methods are sometimes used to produce critical requisition reports. On the USS Fulton, an attack-submarine tender, reports are produced using a different word processing system than the one used onboard the USS Holland. The HOTLIST report transmitted from PMOLANT to the FBM Tenders is not produced for attack-submarine tenders, and all information must be obtained through more tedious methods. A similar report is produced, however, three times per week for the refit management meetings for those submarines (18).

There is no evidence that suggests any standardization of the reports generated for the management meetings. Although a report which includes the basic information is provided by PMOLANT to the Tenders, it is evident that many of the managers involved feel the need for an upgrade to that report in order to satisfy their specific updating and command-unique requirements. It is also evident that, although each of these personalized reports approaches the point of meeting the needs of the users, most users would like to see many of the same improvements to the report. Details of the specific improvements desired by the Tenders are discussed in more detail in a later part of this chapter.

Adaptability of Other Systems

Question 2: If systems, report formats, or forms are available, could they be adapted for use here?

Systems identified in this research used a variety of computer hardware and software.

Most local systems used a word processing software package, but experienced the same problems; the reports were difficult to update or change in format, and tended to be error-prone. For this reason, a word processing approach is not considered optimal.

The system used on the USS Canopus implemented a database approach that met many of the requirements voiced by the users on all the ships, but had been converted to a form that prevented coding examination and analysis. This prevents direct adaptation or improvement of the program, but certain input and output aspects of the program can be identified and used in development of other software.

Use of Available Technology and Equipment

Question 3: If there are no adaptable systems available, could a procedure be written that makes use of available technology and equipment?

At the time this research took place, each FBM Tender had on order a hardware and software package, developed and contracted by PMOLANT. The packages included a Zenith Z248™ computer with one floppy disk drive, a 20-Mg hard drive, and 1 Mg of RAM, to be used for SUBSAT and ROVSS application. This duplication of hardware between the ships makes possible a single report generator for all FBM Tenders.

The system used by the USS Canopus makes use of a popular database management software package that lends itself to producing reports from field-

oriented data. A more expanded program using a similar software package could be developed that considers needs identified from many more users.

Software Identification

Question 4: If a new system or procedure is developed using existing computer hardware, what is the most appropriate software basis or foundation?

Software packages that were considered included those in the fields of word processing, database management, integrated packages, and programming languages.

As discussed earlier, word processing software was rejected due to the difficulty its users have in rearranging data to produce a variety of reports, and the limited ability of the software to recognize and prevent data input errors. Programming using a programming language without the aid of a software package is not only time consuming to the initial developer in writing sufficient capability into the program, but is also limiting to shipboard personnel when improvements or additions are desired at a later date. Integrated packages can be used for this type of application, but the part of the integrated package that would be used would be, almost exclusively, the database management portion. Using an integrated package for this application fails to take advantage of the multi-software capabilities that are the purpose of the complexity of the software. Even more important, it limits the capabilities of the software package to support this sort of application, since each module of the package is reduced in capability to enable the large, complex package to be able to use all areas interactively. It becomes apparent then, that among these choices of readily-available software packages, the more appropriate type of software package for this application is one of database management. This type of software allows the experienced programmer to develop

menu and input screens that interact and accept data input using simple inputs. Data input fields can be controlled as to the size and type of input. Each character of input can be limited to numbers, letters, capitals, and other controls. Fields can be related, compared, and can mathematically interact with each other. The inexperienced programmer is assisted through a series of menus in developing lists, reports, and other manipulations of the data. This capability will allow a complex, capable program to be written that can later be expanded by a less capable operator.

Among the available database management software packages, there is one, dBASE III^(R) (by Ashton-Tate), that is currently under GSA contract. DBASE III^(R) and dBASE III PLUSTM, which is a more-capable upgrade to dBASE III^(R), are very similar in capabilities to other relational database management systems. DBASE III^(R) has already been purchased by PMOLANT as a part of the computer packages that are being delivered to the FBM Tenders, and can be inexpensively upgraded to dBASE III PLUSTM. An application designed using dBASE coding can be implemented by a user who knows nothing about dBASE itself (1:12). Because of the availability, the capabilities available in the "PLUS" upgrade, and a lack of significant additional capability by other programs, dBASE III PLUSTM, was selected as the basic software package to use in developing the HOTLIST Report Program application.

Development Criteria

Question 5: If a new system or procedure is developed, what criterion and concerns must be considered in that development to ensure successful acceptance and implementation in the fleet?

To determine the needs of the supply and repair personnel on the Tenders, unstructured interviews were held. Questions asked included such issues as are included in Appendix D. Although the questions began at these issues,

in many cases, further questions were asked to dig deeper into the needs of these users.

The criterion identified as critical system capabilities may be divided into two distinct major areas: 1) reporting requirements of the supply and repair personnel receiving the report, and 2) needs of the program operator.

Reporting Requirements. Needs expressed by the officers interviewed may be grouped into five categories: 1) end use of report, 2) recipients the report should be designed for, 3) fields of information desired on the report, 4) periods that the report should cover, and 5) operator-oriented qualities the system should provide.

Presently, the Tenders each produce only one standard report for non-supply customers, and only one Tender produces any other format. Because of this, interviewees tended to express desires for an end product in relation to one "do-all" report, and a few indicated that the idea of using several tailored mini-reports was difficult to comment on, as they had only had the one report available in the past for management.

Report End Use. There were three primary uses identified for the Hot List report. The main application, presently implemented on all Tenders, was for support of refit management meetings at CO and department head levels. Other uses identified included Repair Parts Petty Officer (RPPO) and Repair division requisition tracking, and SUBSAT/ROVSS expediter requisition tracking and inventory stock-checking.

Report Recipients. There is presently a fairly consistent core of Hot List report recipients throughout the FBM squadrons. Normally included in present distribution are: squadron Commodore, Engineer, and Supply Officer, Tender CO, Repair Officer, Production Management Assistant (PMA), Supply

Officer, ship supervisors, and SUBSAT and ROVSS expeditors, and in-port supported-unit COs and Engineers. Sometimes included in the distribution list are: squadron Operations and Material Officers, Tender Assistant Supply Officer, and supply transit-shed officer. In some cases, the Tender Repair Officer receives several copies that he then distributes to the work centers or Repair divisions for those divisions to use the information on requisitions affecting their jobs (2, 3, 17, 18, 21, 23).

The type of report produced was found to influence the list of recipients. Most interviewees felt that RPPOs and specific Repair divisions did not need the entire Hot List with all requisitions for all jobs, but only actually needed information pertaining to jobs done by that division. Although SUBSAT and ROVSS expeditors needed information from the entire list to stock-check outstanding requirements, this function did not require availability of all standard information, and such a report slowed that process when compared to a report containing only a list of needed stock numbers. Transit-shed officers were also sometimes not included in the distribution list for the same reason.

Desired Fields. The fields of information desired included most of those presently provided, plus several not currently available on reports from one or more of the Tenders. Data field desires changed somewhat when the possibility of tailored mini-reports was introduced.

For the main report, for use by squadron and supported-unit officers, and Tender department heads, data fields desired (broken down by supported unit and sorted by requisition priority and number) included: requisition number, item National Stock Number (NSN), nomenclature, and quantity, job control number (JCN) with description, and requisition status information. There was a unanimous desire to show requisition status and action activity code

information in plain language rather than the codes received from PMOLANT, but current capabilities of some Tenders made those translations difficult and error-prone, especially when training new expeditors.

A report tailored for RPPOs and Repair divisions required the same fields as the main report, but sorted in a different manner. In these cases, the recipients would only need those requisitions pertaining to their specific work centers, sorted by tended-unit and requisition number.

Expeditors needed two much more streamlined reports, covering all tended units and all Repair divisions, for the purposes of querying action activities and item managers on the current status of requisitions, and stock-checking the outstanding stock items against the Tender's stock receipts. Use of the entire main Hot List for this purpose was inclined to slow the expeditor's work down, as the expeditor was required to flip through several pages to obtain a few key numbers.

Additionally, SUBSAT and ROVSS officers needed a streamlined list of those requisitions that had been completed, to enable analysis and identification of stocking level problems.

Reporting Periods. Hot Lists are presently produced daily on all FBM Tenders contacted, and by PMOLANT. This frequency met the minimum needs of all of the interviewees. One of the PMAs interviewed (who received Hot Lists that were produced at 0600), however, commented that he would like to have the report generated later in the day on days when there was a refit management meeting. The reason the report was produced so early on the ship was apparently the difficulty in updating and producing it quickly (12). There were no other requests for any changes in frequency from the current daily rate.

System Characteristics. The primary concern in this area was on the subject of errors. Many of those interviewed mentioned the tendency for those producing the report to make mistakes both typographically, and in translation of supply codes to plain language. Those errors not only inconvenienced those trying to use the report, but also resulted in extending the time required to produce the reports. Errors were worst on the Tenders using word processing to produce the reports.

At present, none of the systems used on the three Tenders in this study have any controls to verify entry or assist in translation of codes.

Needs of the Operator. The HOTLIST Report Program was developed specifically for operation by personnel who typically are assigned the task of producing such reports in FBM SUBSAT and ROVSS offices. These personnel usually hold the ranks of Seaman (E-3) through First Class Petty Officer (E-6), and are normally qualified as Storekeepers (SK), although ROVSS offices may, at times, assign Petty Officers, who have been loaned from other divisions for technical assistance, to the task. These personnel usually hold technical ratings such as Hull Technician (HT) and Electronics Technician (ET), and may be somewhat unfamiliar with supply lingo and codes.

System Paradigm. Efforts were made in the development of the HOTLIST Report Program to identify and include the capabilities of the system necessary to support the users, as identified during the interviews (21).

Reports were designed to include those fields of data identified as important for each of the recipients. The top level management report for REFIT management meetings was designed to be divided into one section for each supported unit, sorted by requisition priority and requisition number. The report for the use of RPPOs and Repair divisions has been divided by work

center, and sorted by supported unit and requisition number. A simple, short report was designed for expeditors to use for stock-checks, listing requisitions in stock number order, with the minimum necessary information.

Included in development considerations was a concern for rapid understanding of the requirements of each screen. A main emphasis of development of this software was the interest in speeding up the production of the required reports so that specialized reports and unusual printing frequencies could be accommodated. To better facilitate this, a standard screen format representation was developed so that the user would not be required to adjust to a different image for each screen, and could therefore concentrate on the contents of the screen.

Also of prime importance was the need to include input controls wherever possible as a measure to prevent errors by the user. Many of the intended users will have little or no experience with computer operation, and these controls are expected to reduce their initial fear of possible consequences of erroneous inputs, and, thus, reduce their hesitancy to use the computer. Examples of the controls used are a limitation of possible responses from each menu to the range of the desired inputs, automatic capitalization of many of the character data, and a limitation to numbers-only for certain other data inputs. The most significant of the controls, automatic translation of supply codes, is expected to eliminate the requirement that the operator be highly familiar with the meanings of supply status and action activity codes, and even with names and hull numbers of supported ships and submarines.

The result of these efforts was an easy-to-use, comprehensive report generator, designed for junior personnel to run with minimal training.

Specifics of each of these system criterion are discussed in detail as they are applied to the software in Chapter IV, Program Documentation. Actual program code developed, shown in Appendix A, uses many approaches and manipulations of basic dBASE III PLUS coding (4, 5, 6, 7, 8, 10, 15, 20).

IV. Program Documentation

Program Organization

The HOTLIST Report Program has been written for use in conjunction with Ashton Tate's dBASE III PLUS™ database management software, using dBASE coding. All coding for this program is included in Appendix A. An overall organization chart of the program, showing the basic relationships between the main modules is shown in Figure 1.

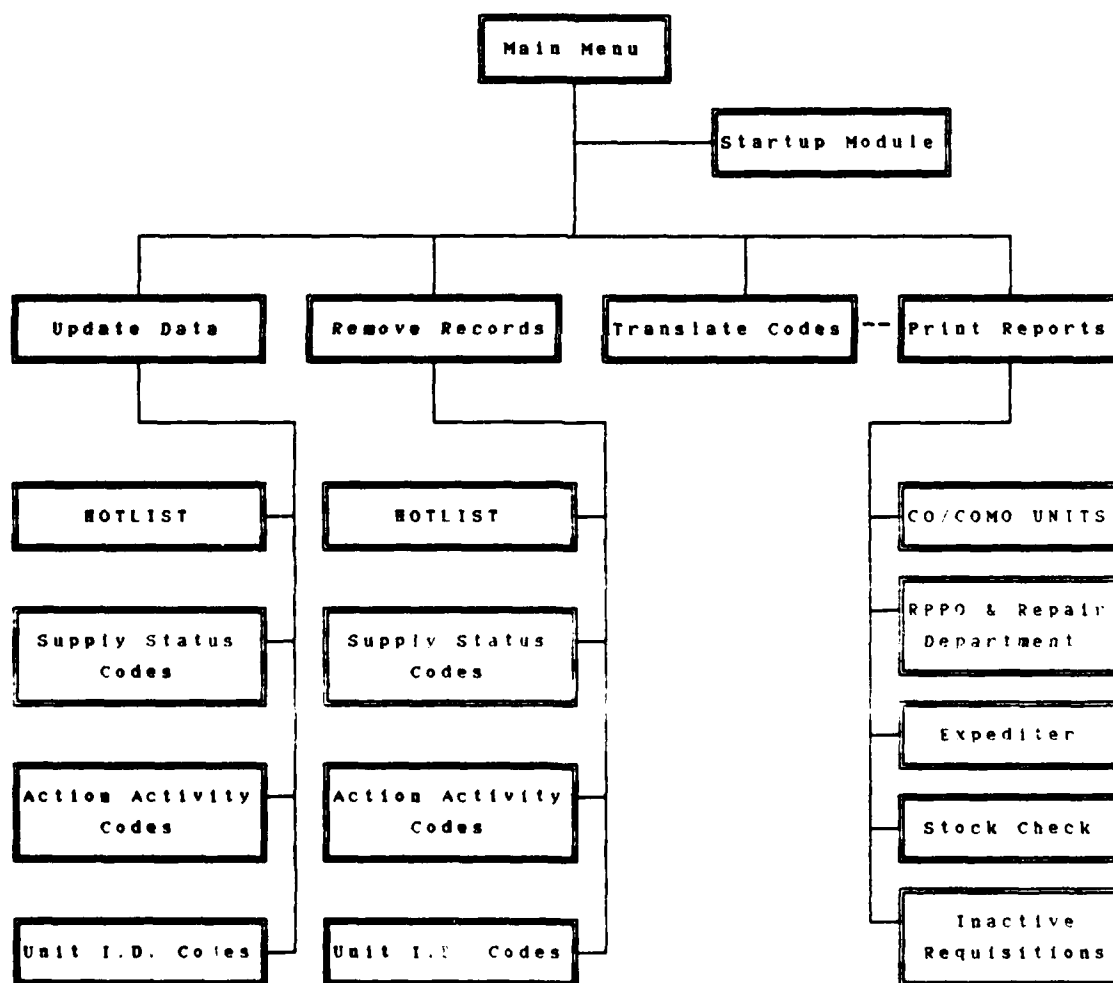


Fig. 1. Organization of HOTLIST Report Program

As shown, the Main Menu provides the user with the options of updating data, removing records, translating code to plain English, or printing reports. These choices lead to other menus that allow selection and operation of more specified options within the various lower level modules.

Introduction

The beginning of the program presents the introductory screens shown in Figures 2 and 3.

<p style="text-align: center;">HOTLIST Report Program Introduction</p>
<p style="text-align: center;">HOTLIST Report Program version 2.1 Copyright (c) Claire C. Smith 1987. All Rights Reserved.</p> <p>The HOTLIST Report Program is an easy-to-use program designed to provide U. S. Navy SUBSAT and ROVSS offices with a simple method by which they may input critical "Hot List" requisition data, and easily generate a variety of reports for use by both those involved directly in 'REFIT' management meetings, and also those in supply who expedite the requisitions.</p> <p style="text-align: center;">Enter FBW Tender UIC to continue with this program OR Press <RETURN> to EXIT to DOS</p>
<p style="text-align: center;">UIC:</p>

Fig. 2. Introductory Screen

At this point, only the responses of a five-number Unit Identification Code (UIC) or <RETURN> will be accepted by the computer. The response, <RETURN> will cause the program to end, and will cause the user to exit from

the program, and go to the Disk Operating System (DOS) prompt, "C>." A response of inputting the Tender's UIC will bring up the screen shown in Figure 3.

HOTLIST Report Program Rights and Warrantees
<p>*** RESTRICTED RIGHTS WARNING ***</p> <p>HOTLIST Report Program is a copyrighted package designed for the exclusive use of the United States Military, and is protected by U. S. Copyright Law (Title 17 United States Code). Unauthorized reproduction and / or sales may result in imprisonment of up to ONE YEAR, and fines of up to \$10,000 (17 USC 506). Copyright infringers may also be subject to civil liability.</p> <p>*** DISCLAIMER OF WARRANTY ***</p> <p>This software and manual is distributed without any express or implied warranties whatsoever. Because of the diversity of conditions and hardware under which this program may be used, no warranty of fitness for a particular purpose is offered. The user is advised to test the program thoroughly before relying on it. The user must assume the entire risk of using the program.</p>
<p>Press any key to continue</p> <p>Copyright (c) Claire C. Smith 1987. All Rights Reserved</p>

Fig. 3. Rights and Warranties Screen

Operation of the STARTUP subroutine that produces the screens shown in Figures 2 and 3 is made from within the MAINMENU module. A flow chart for the STARTUP subprogram is shown in Figure 4.

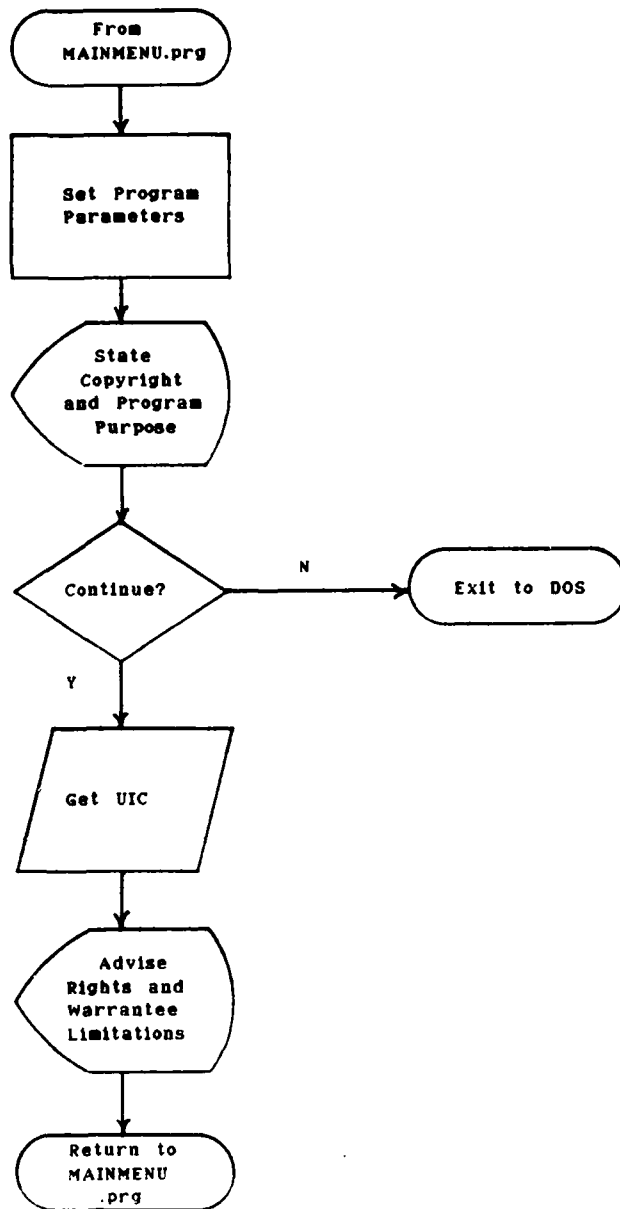


Fig. 4. STARTUP.prg Flow Chart

This module, which is called automatically from the MAINMENU.prg program, introduces the program, offers the opportunity to exit the program, obtains information necessary to tailor reports to the appropriate Tender, and provides copyright and warrantee information. When these functions have been completed, program functions are returned to the MAINMENU module.

Main Menu

Entry into the program following the first two screens presents the user with the main menu screen shown in Figure 5.

<p style="text-align: center;">HOTLIST Report Program Main Menu</p>
<p style="text-align: center;">Choose Desired Action</p> <p>[1] Change or Add To Records in a Data Base</p> <p>[2] Remove or Reactivate Records in a Data Base</p> <p>[3] Translate supply codes for reports</p> <p>[4] Print Reports</p> <p>[0] Exit the HOTLIST Report Program</p>
<p style="text-align: center;">Enter Choice (0-4): 0</p>

Fig. 5. Main Menu Screen

The Main Menu screen represents the top level operational module as shown in Figure 1. In this module (MAINMENU.prg), the user is given the

opportunity to select in which of the main submodules he or she desires to work. A selection of choices <1> through <4> will send the user to the beginning of the next module, while a selection of <0>, <RETURN>, or <ESC> will cause the user to exit directly from the system to the DOS prompt. It should be noted that, once the user is operating within the program, he or she must return to this screen to exit from the HOTLIST Report Program.

A consideration which was made in the development of this program was the concern that the user have an easy, standardized method by which to quickly move to higher-level menus and exit from the program. This was ensured by the menu standardization that predesignates the "exit to higher menu" input as a "0", and places that choice at the end of the screen. In each case, entry of a <0>, <RETURN>, or <ESC> will move the user to the next higher level, or, in the case of the MAINMENU screen, will cause the user to exit the program (21).

The MAINMENU.prg module uses the logic shown in the flow chart in Figure 6, which is simply a selection of a "CASE" from among several choices. This operates in a similar fashion to a series of "IF" statements used in most programming languages.

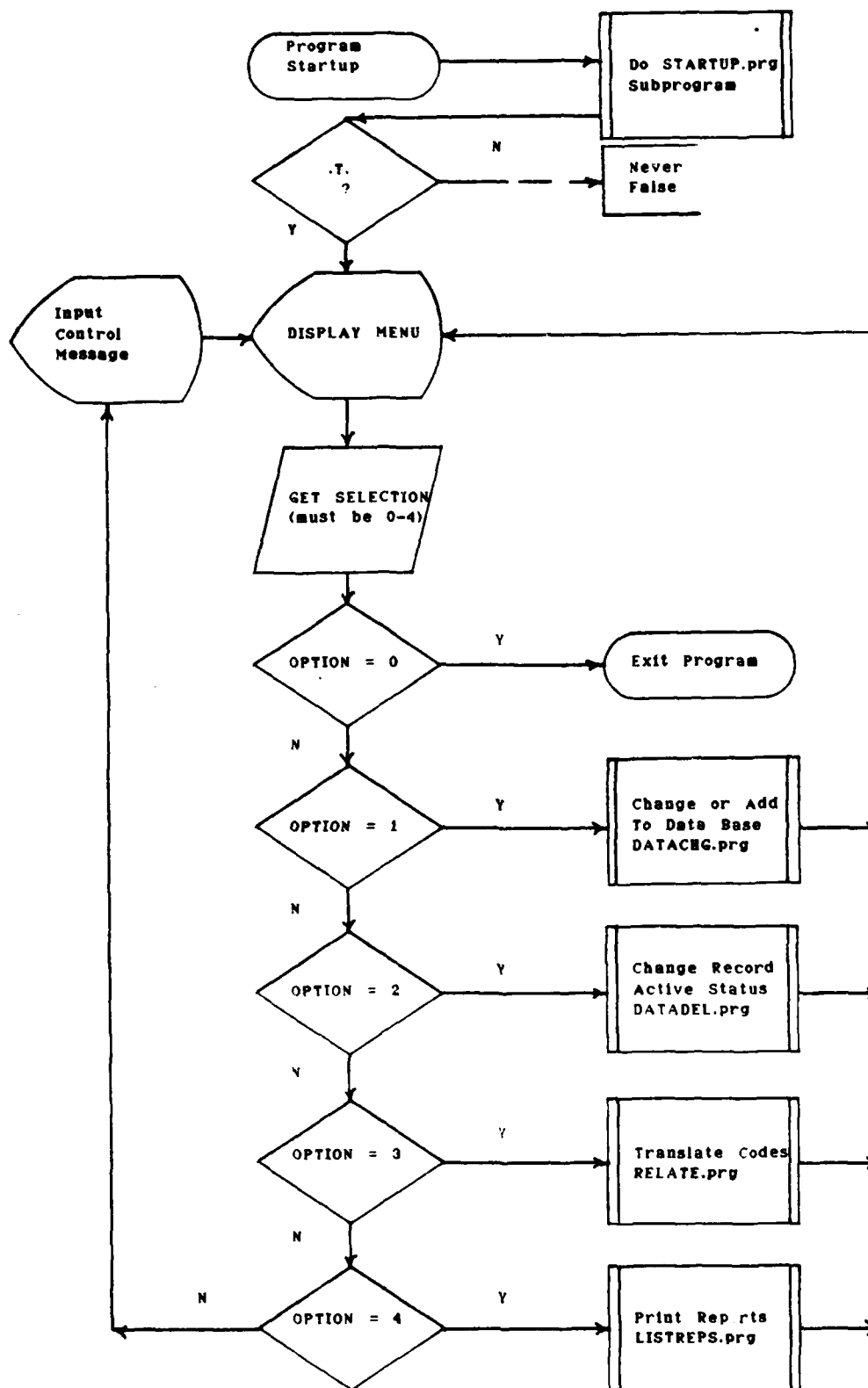


Fig. 6. MAINMENU.prg Flow Chart

Change or Add to Records in a Data Base

A selection of choice <1> in the Main Menu will move the user to the menu screen shown in Figure 7. Here, the user is given a choice of data bases to which he or she may add or make a change.

HOTLIST Report Program Change or Add To Records in a Data Base	
Select the Data Base you want to Change	
[1]	HOTLIST
[2]	Supply Status Codes
[3]	Action Activity Codes
[4]	U I C s
[0]	Return to Main Menu
Enter Choice (0-4): 0	

Fig. 7. DATAHG.prg Change Data Base Selection Menu

This menu, as with the main menu, operates through a simple CASE choice. Selection of <0>, <RETURN>, or <ESC> will move the user back to the previous screen, the Main Menu. Selection of a specific data base will move the user to the beginning of one of the subordinate sub-modules that are displayed in the chart in Figure 8.

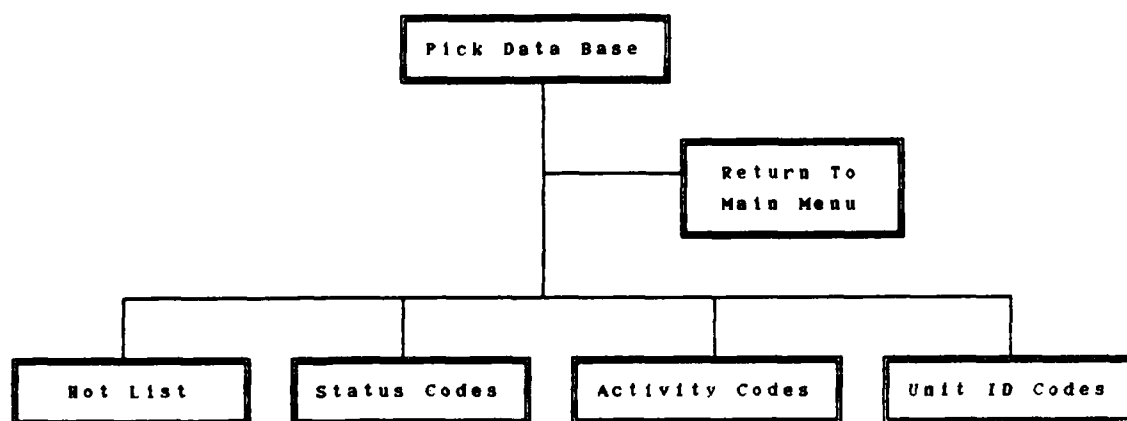


Fig. 8. DATAchg.prg Organization

The logic used is much like that used in MAINMENU.prg, as shown in the flow chart in Figure 9.

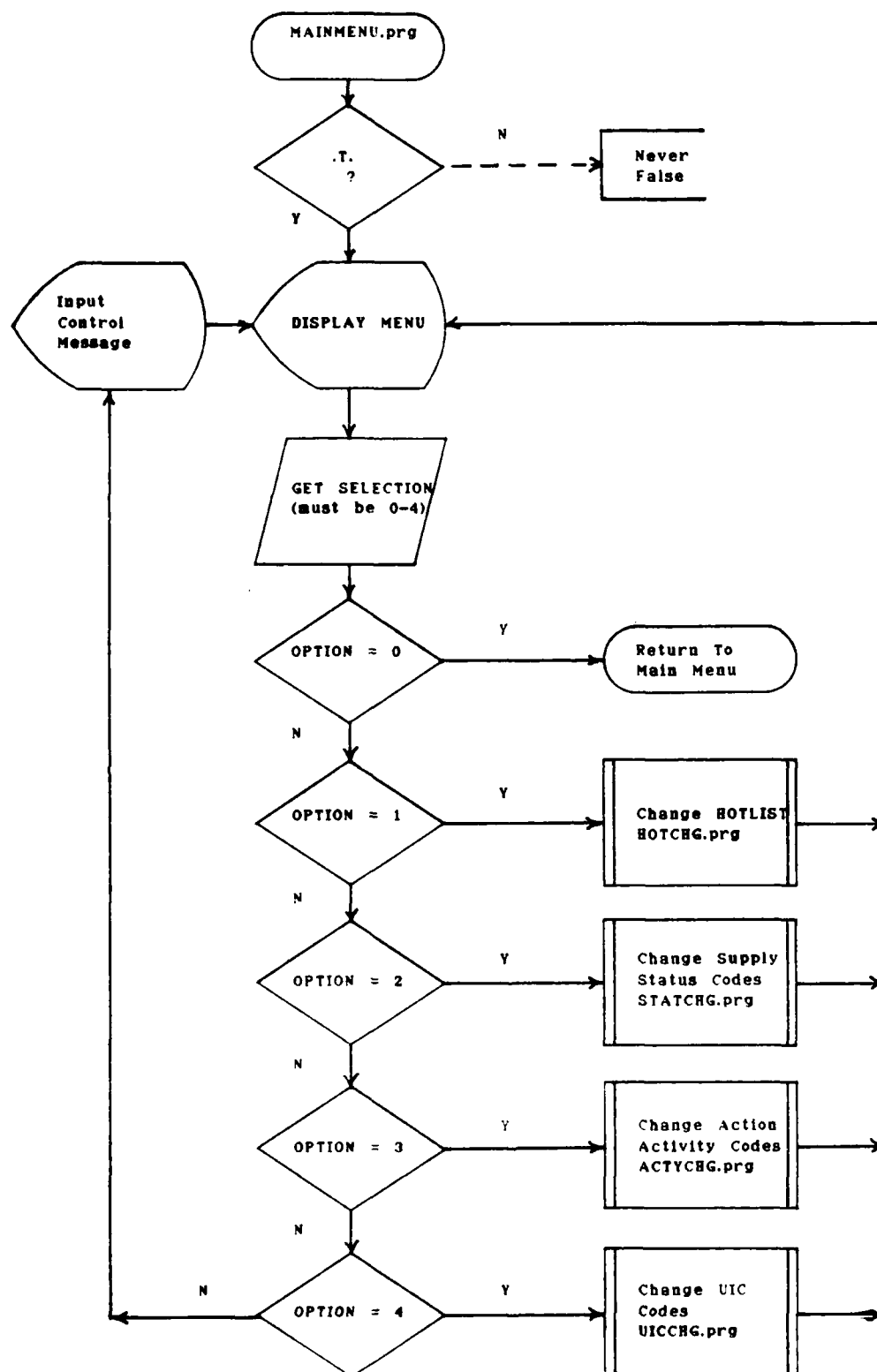


Fig. 9. DATAchg.prg Flow Chart

Change or Add to Records in HOTLIST. Selection of Option <1> in the DATACHG menu will move the user into the submodule in which he or she may change or add to records in the main HOTLIST data base, and open HOTLIST.dbf data base and all associated indexes. In this module, the user is first asked for the requisition Julian date associated with the record the user wishes to add to or change. It is not necessary that the user know whether or not the record is in the database. Only number entries or a <RETURN> are accepted as input. An entry of <RETURN> will close all open database files and bring the user back to the data base selection menu (Figure 7). An entry of a Julian date moves the user into the module. Figure 10 shows the screen that requests the date.

HOTLIST Report Program Change or Add To Records in HOTLIST	
Enter Requisition Julian Date:	0
To return to menu, just press <RETURN>	

Fig. 10. Requisition Date Query Screen

At this point, the program filters the data base so that only records with the specified date will be considered for the update. The user is then presented with the screen in Figure 11, which requests the four-digit requisition serial number.

HOTLIST Report Program Change or Add To Records in HOTLIST
Enter Requisition Julian Date: 9999
Enter Four-digit Requisition Serial Number:

Fig. 11. Requisition Serial Query Screen

Serial number entries may have letters or numbers in the first three spaces, but only numbers in the fourth, to accommodate serial numbering systems in the FBM supply system. Upon entry, the program looks for that number from among the records that have the Julian date entered in the previous screen.

If the requisition number is not in the database, the user is informed of that fact, and given the opportunity to create a new record, as shown in Figure 12.

HOTLIST Report Program Change or Add To Records in HOTLIST
Enter Requisition Julian Date: 9999
Enter Four-digit Requisition Serial Number: W999
Requisition Number not found.
Do you want to create a new record? (Y or N)
Y

Fig. 12. Requisition Not Found Screen

Only the entries <Y>, <N>, and <RETURN> are accepted by the computer. If the user enters <N>, the requisition date query screen (Figure 10) is returned to allow entry of another record. The default answer is preset at <Y>, so either <Y> or <RETURN> will bring up a data input screen, as shown in Figure 13.

HOTLIST Report Program Add or Update Requisition Information			
Requisition Information			
UIC:	JULIAN DATE: 9999	SERIAL #: W999	NIIN: - -
PRIORITY (Use X for spec. exp.):		NOMENCLATURE:	
QTY: 0	U/I:	ENDUSER:	NIS/PNIS/NC/NS: TSN:
Job Information			
JOB NAME:	WORK CENTER:	JSN:	
Status Information			
STATUS CODE:		ACTION ACTIVITY:	
REMARKS (Contract Number, ESD, EDD, etc.):			
Press <ENTER> after entry if cursor does not move to next field. Press <ESC> to finish edit.			

Fig. 13. HOTLIST Data Input Screen

If the requisition was found in the data base, but has been given an "Inactive" status through the "Remove Records" module, the screen will show that status, as shown in Figure 14. The default input for this screen is <N>, as a <Y> will delete information in that record and present a screen with blank data fields, as in Figure 13.

HOTLIST Report Program Change or Add To Records in HOTLIST
Enter Requisition Julian Date: 9999
Enter Four-digit Requisition Serial Number: W999
This requisition number has been deleted from current files. Do you want to use it anyway? (Y or N)
WARNING: Data presently in record will be lost unless record is 'Undeleted' first, using 'Delete or Undelete Records' Module.
N

Fig. 14. Requisition Inactive Screen

If the record requested by the user is found, the information from that record will be displayed on the same screen shown in Figure 13, as shown in Figure 15, to allow the user to edit the data.

HOTLIST Report Program Add or Update Requisition Information		
Requisition Information		
UIC: 04720 JULIAN DATE: 9999 SERIAL #: W999 NLIN: 00-215-8442 PRIORITY (Use X for spec. exp.): 1 NOMENCLATURE: NUT LOCKING QTY: 25 U/I: DZ ENDUSER: B DIV NIS/PNIS/NC/NS: NIS TSN: 6273		
Job Information		
JOB NAME: #1 MG	WORK CENTER: EA01	JSN: 0293
Status Information		
STATUS CODE: BV ACTION ACTIVITY: S9I REMARKS (Contract Number, ESD, EDD, etc.): ESD 14 Jun 87. Contract No. N00002-86-M-5183. Air shipment expected		
Press <ENTER> after entry if cursor does not move to next field. Press <ESC> to finish edit.		

Fig. 15. HOTLIST Data Update Screen

Data entry in this screen is controlled for each of the data fields. As the user completes each field, the cursor is sent to the next field. Where appropriate, entries are limited to numbers only, and letters are automatically capitalized. Most of the information is taken from either the requisition input information from the ordering activity, or the Hot List status report from PMOLANT. When the last field on the screen is completed, or upon input of the <ESC> key, the data field portion remains the same, while the bottom block of the screen changes to the line shown in Figure 16.

HOTLIST Report Program Add or Update Requisition Information		
Requisition Information		
UIC: 04720 JULIAN DATE: 9999 SERIAL #: W999 NIIN: 00-215-8442 PRIORITY (Use X for spec. exp.): 1 NOMENCLATURE: NUT LOCKING QTY: 25 U/I: DZ ENDUSER: B DIV NIS/PNIS/NC/NS: NIS TSN: 6273		
Job Information		
JOB NAME: #1 MG	WORK CENTER: EA01	JSN: 0293
Status Information		
STATUS CODE: BV ACTION ACTIVITY: S9I REMARKS (Contract Number, ESD, EDD, etc.): ESD 14 Jun 87. Contract No. N00002-86-M-5183. Air shipment expected		
Is input OK? (Y or N) (<ESC> to QUIT) N		

Fig. 16. HOTLIST Input Verification Screen

At this point, the user has four possible entries. An entry of <ESC> will return the user to the requisition date input screen without saving any of the data input into the HOTLIST Data Update screen. <N> or <RETURN> will retain the update screen with the data, and move the cursor back to the first field of entry. <Y> will place all data shown on the screen into a record in the HOTLIST data base, and return the user to the requisition date input screen for further record updates.

A flow chart of the submodule to change or add to HOTLIST records (HOTCHG.prg) is shown in Figure 17.

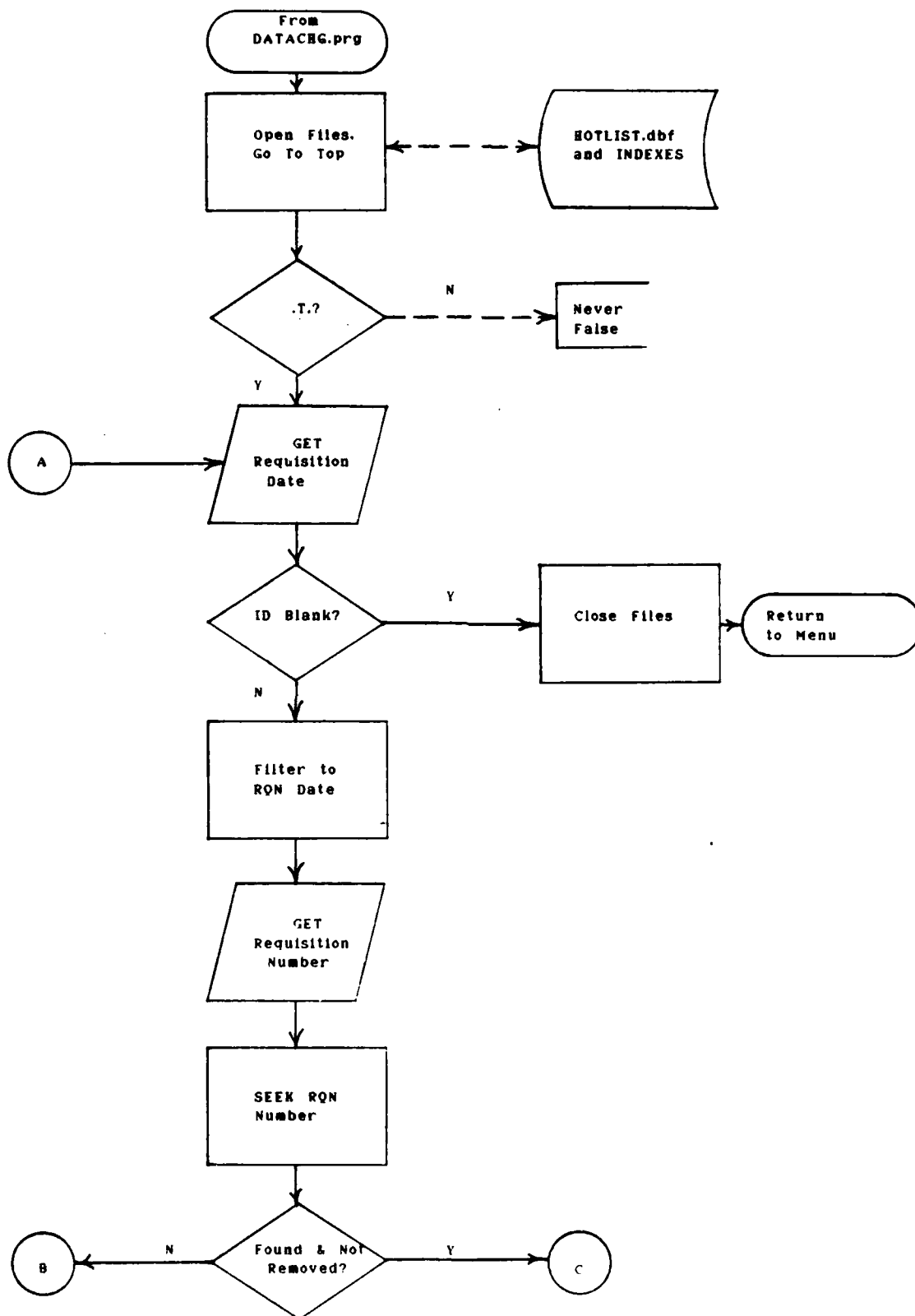


Fig. 17. HOTCHG.prg Flow Chart

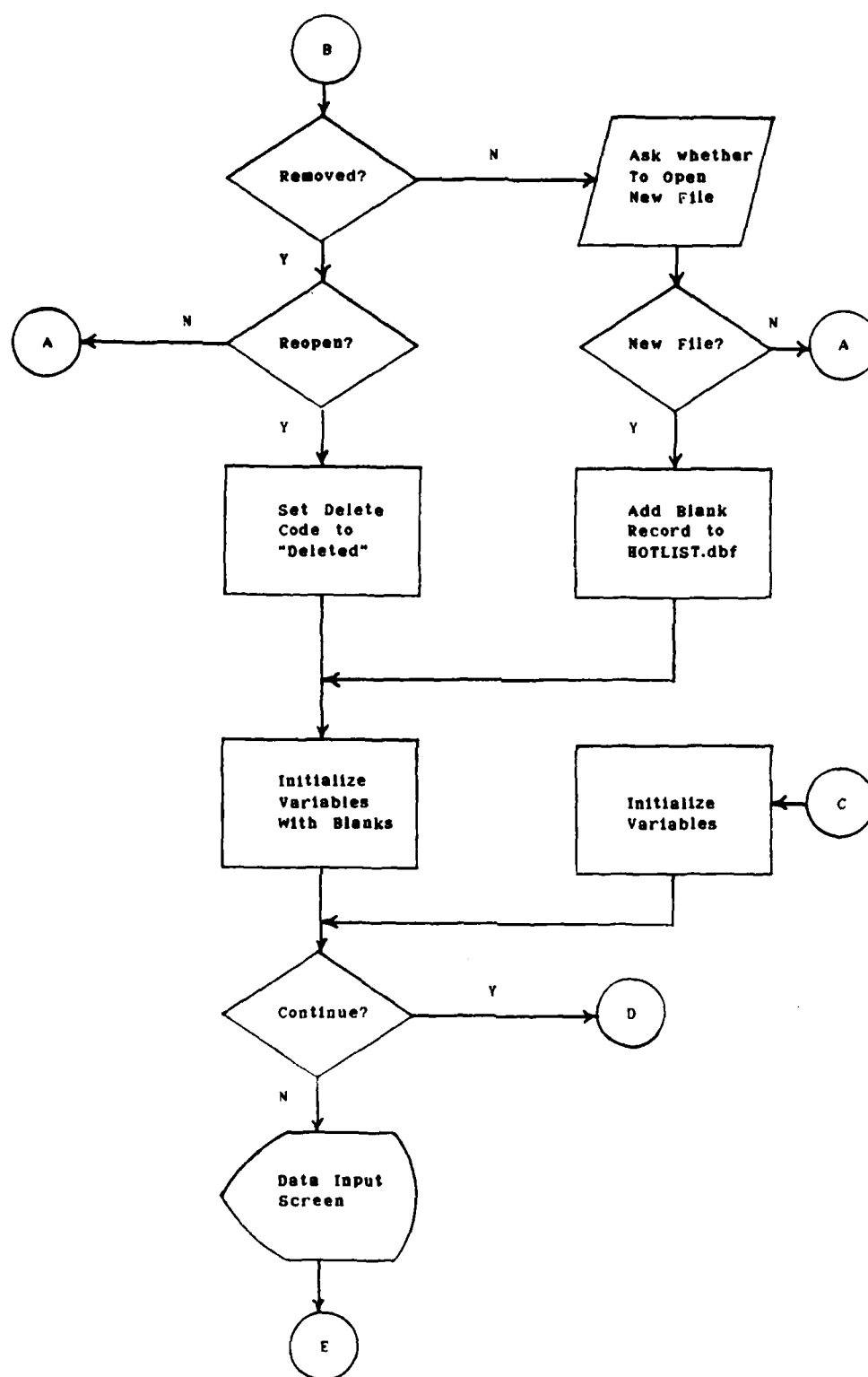


Fig. 17. Continued

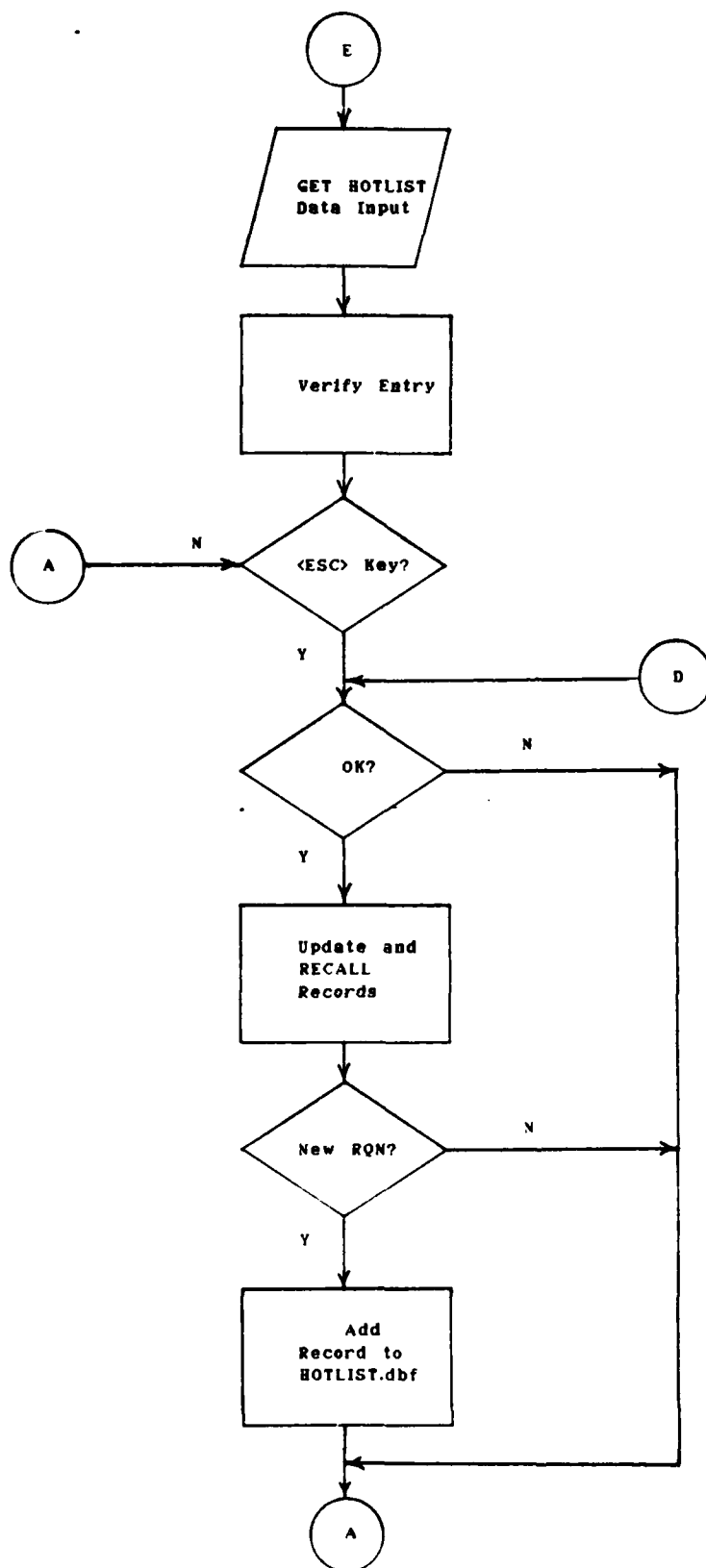


Fig. 17. Continued

Change or Add to Supply Status Records. From the Change Data Base Selection Menu, option <2> will enter the submodule to change or add to the supply status code data base, and open STATUS.dbf and all related indexes. This data base is used to provide definitions of supply status codes automatically to the reports. The user is first asked for the two-digit status code to change, on the screen shown in Figure 18. It is not necessary that the user know whether or not the record is in the database. An entry of <RETURN> will close all open database files and bring the user back to the data base selection menu (Figure 7). An entry of the status code will move the user into the module.

<p>HOTLIST Report Program Add To or Change STATUS CODES</p>
<p>Enter Status Code:</p> <p>To return to menu, just press <RETURN></p>

Fig. 18. Status Code Query Screen

Status code inputs accepted may be either letters or numbers, but all letter inputs are automatically capitalized. Upon entry, the program looks for the file with that status code.

If the status code is not in the database, the user is informed, and given the opportunity to create a new record, as shown in Figure 19.

<p>HOTLIST Report Program Add To or Change STATUS CODES</p>
<p>Enter Status Code: CL</p> <p>Status code not found.</p> <p>Do you want to create a new record? (Y or N)</p>
<p>Y</p>

Fig. 19. Status Code Not Found Screen

Only the entries <Y>, <N>, and <RETURN> are accepted by the computer. If the user enters <N>, the status code query screen (Figure 18) is returned to allow entry of another record. The default answer is preset at <Y>, so either <Y> or <RETURN> will bring up a data input screen, as shown in Figure 20.

HOTLIST Report Program Add or Update Status Codes
 Status Code: CJ Leading Service (Navy, Army, All, Etc): All Description of Status: Rejected; obsolete. Request sub on new doc or same item on 1348-6.
Is input OK? (Y or N) (<ESC> to QUIT) N

Fig. 20. Status Code Input/Update Screen

If the status code was found in the data base, but has been given an "Inactive" status through the "Remove Records" module, the screen will show that status, as shown in Figure 21. The default input for this screen is <N>, as a <Y> will delete information in that record and present a screen that looks like the one in Figure 20, with blank data fields. If the record was found, the status will be displayed for edit, as in Figure 20. In this screen, "Leading Service" inputs are limited to four alpha-characters, and the first will be automatically capitalized. For the "Description" entry, a sixty-eight character input in any combination of letters and numbers is allowed. Entry verification works the same way as it does in the HOTCHG.prg module (as described following Figure 16).

<p>HOTLIST Report Program Add To or Change STATUS CODES</p>
<p>Enter Status Code: CJ</p>
<p>This status code has been deleted from current files. Do you want to use it anyway? (Y or N)</p> <p>WARNING: Data presently in record will be lost unless record is 'Undeleted first using 'Delete or Undelete Records' Module.</p>
<p>N</p>

Fig. 21. Status Code Inactive Screen

A flow chart of the submodule to change or add to Status Code records (STATCHG.prg) is shown in Figure 22.

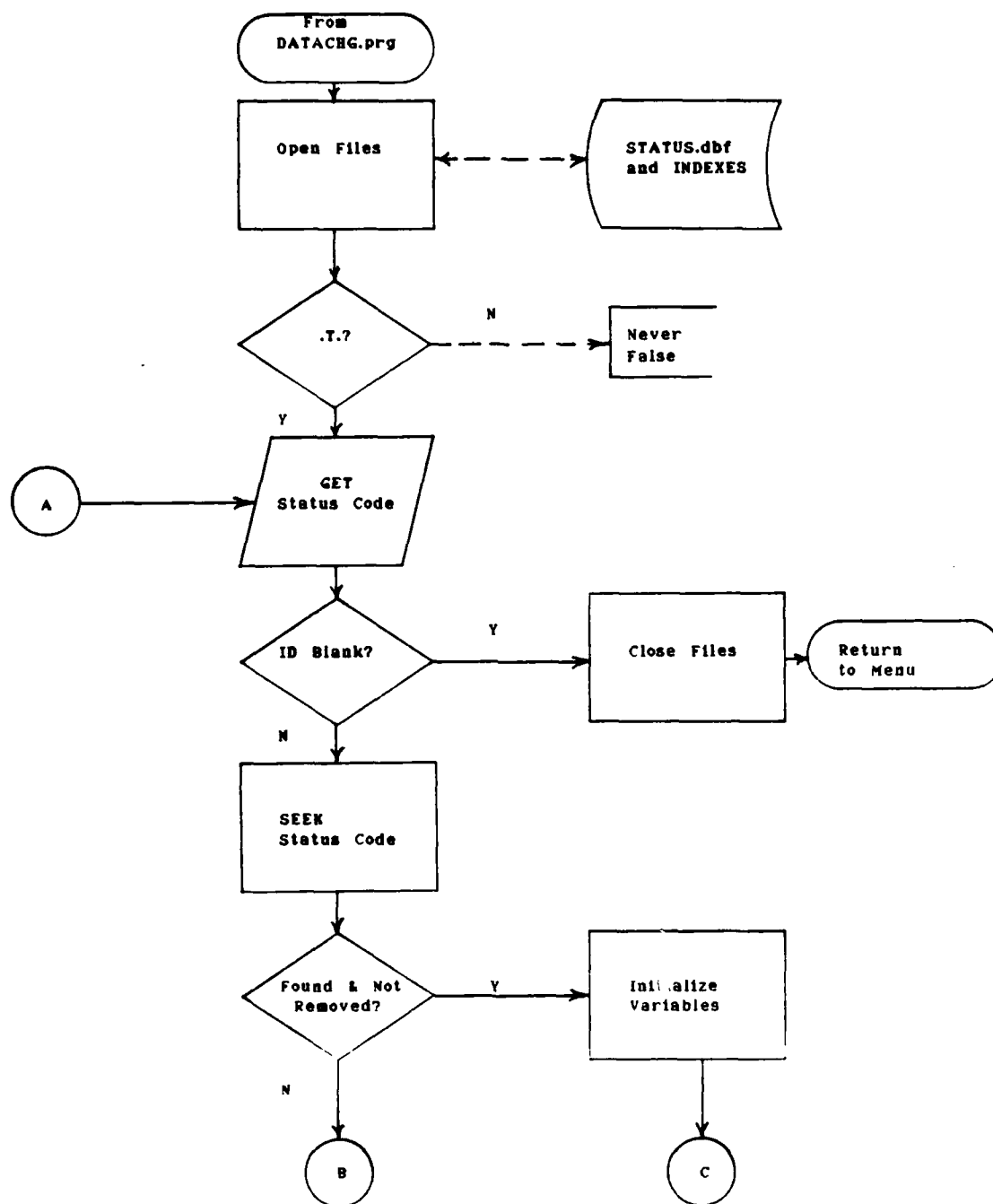


Fig. 22. STATCHG.prg Flow Chart

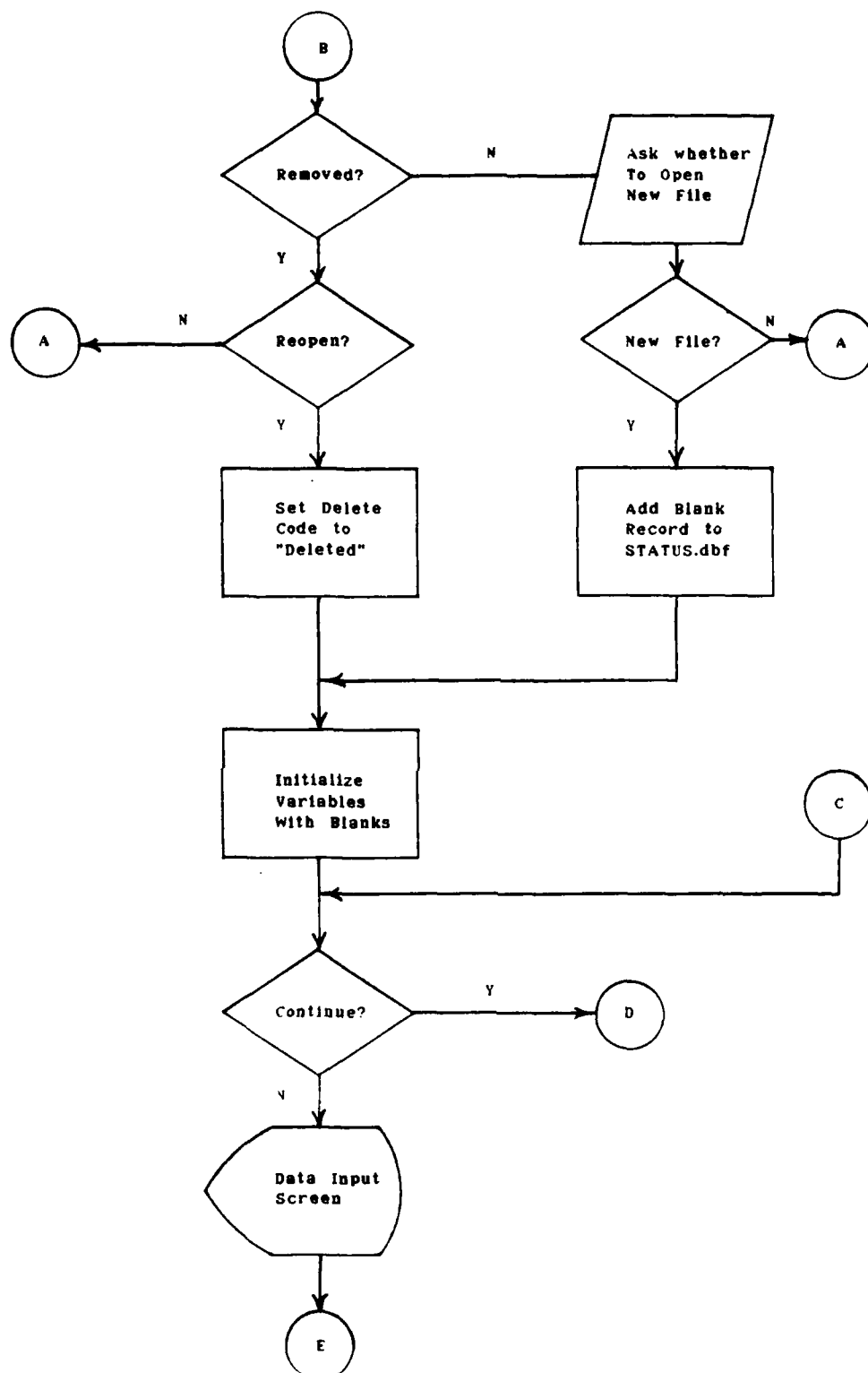


Fig. 22. Continued

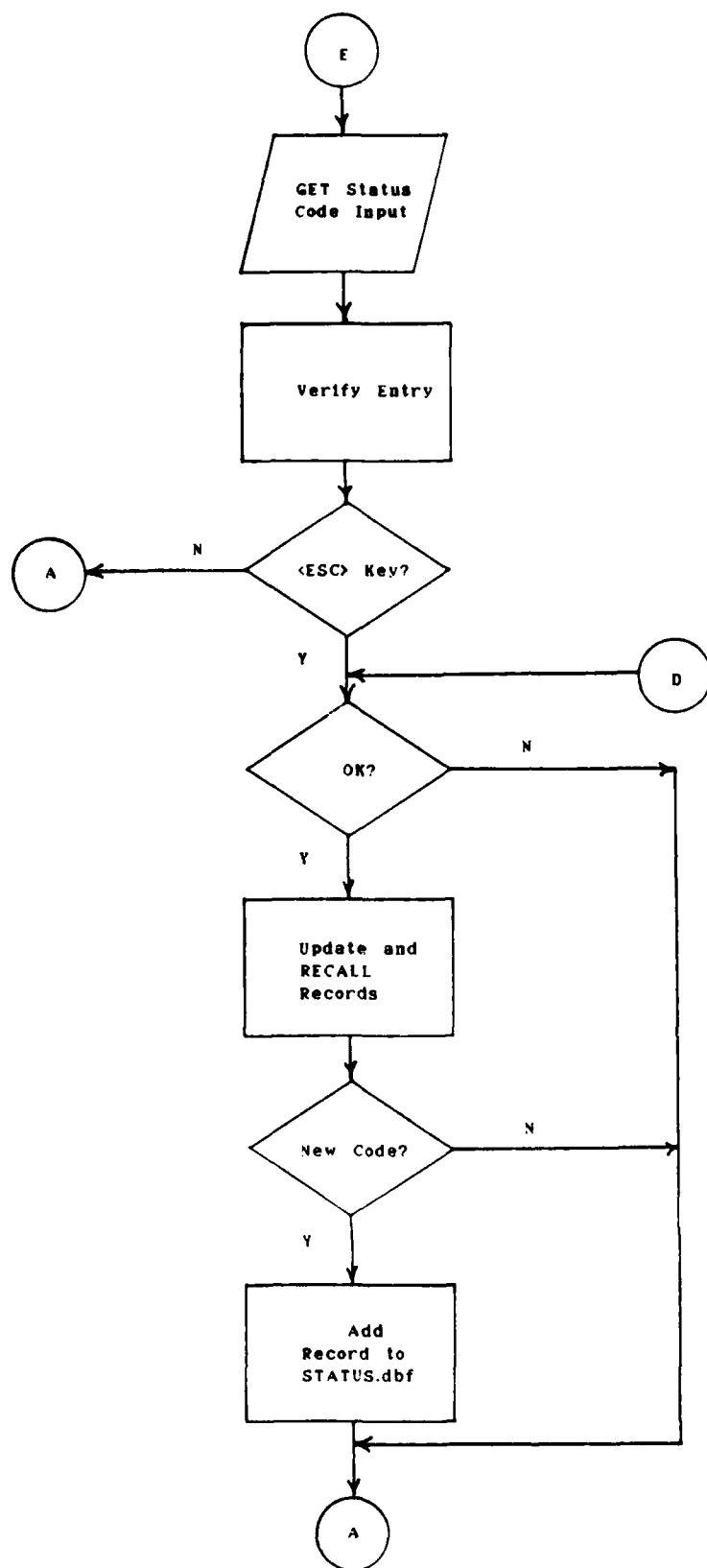


Fig. 22. Continued

HOTLIST Report Program
Add To or Change ACTION ACTIVITY Codes

Enter Action Activity Code:

To return to menu, just press <RETURN>

52

Action activity code inputs accepted may be either letters or numbers, but all letter inputs are automatically capitalized. Upon entry, the program looks for the file with that action activity code.

If the action activity code is not in the database, the user is informed, and given the opportunity to create a new record, as shown in Figure 24.

HOTLIST Report Program Add To or Change ACTION ACTIVITY Codes
Enter Action Activity Code: NRL
Action Activity code not found.
Do you want to create a new record? (Y or N)
Y

Fig. 24. Action Activity Code Not Found Screen

Only the entries <Y>, <N>, and <RETURN> are accepted by the computer. If the user enters <N>, the action activity code query screen (Figure 23) is returned to allow entry of another record. The default answer is preset at <Y>, so either <Y> or <RETURN> will bring up a data input screen, as shown in Figure 25.

HOTLIST Report Program Add To or Change ACTION ACTIVITY Codes
Enter Action Activity Code: NRZ
This Action Activity code has been deleted from current files. Do you want to use it anyway? (Y or N)
WARNING: Data presently in record will be lost unless record is 'Undeleted first using 'Delete or Undelete Records' Module.
N

Fig. 26. Action Activity Code Inactive Screen

A flow chart of the submodule to change or add to Action Activity Code records (ACTYCHG.prg) is shown in Figure 27.

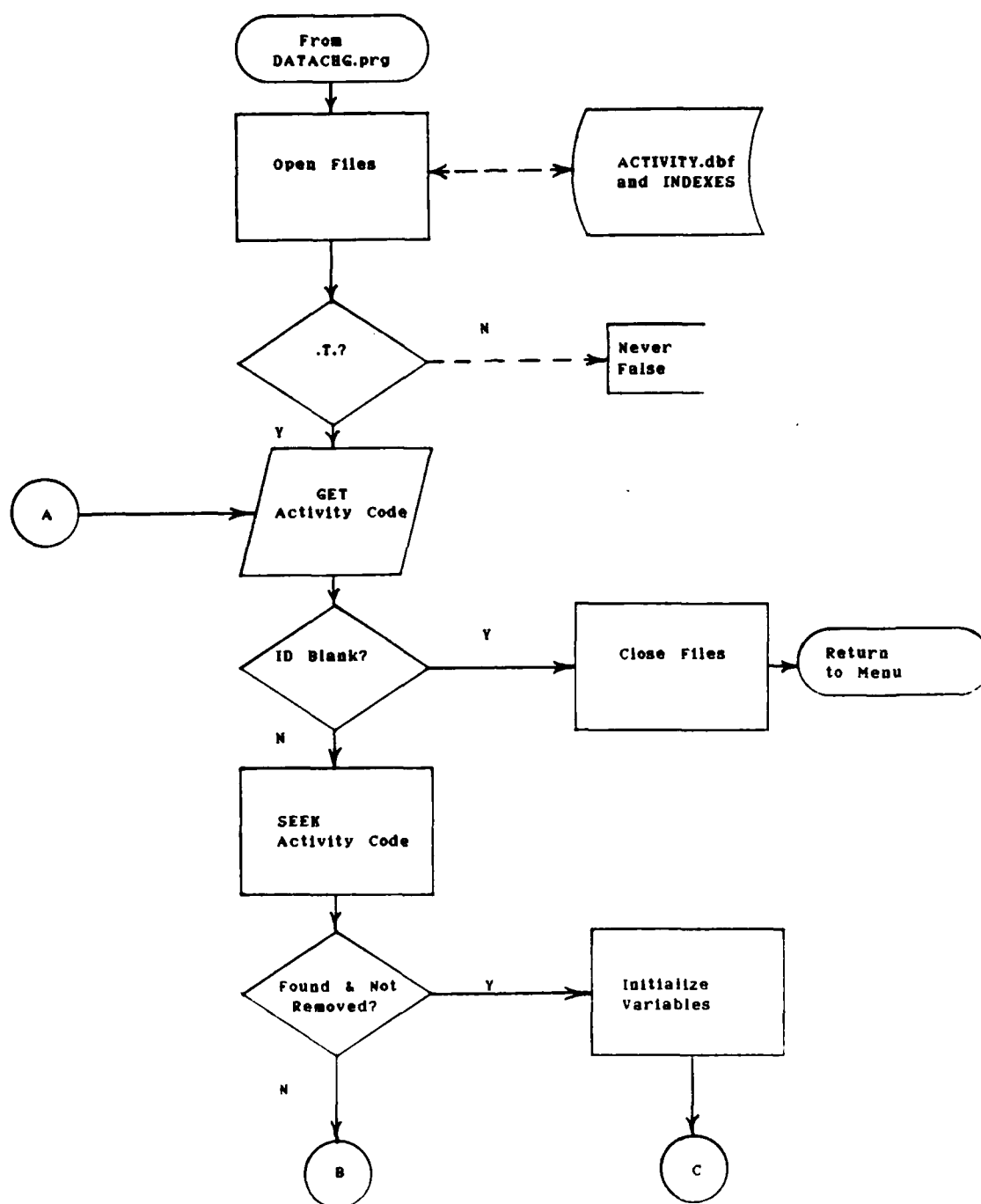


Fig. 27. ACTYCHG.prg Flow Chart

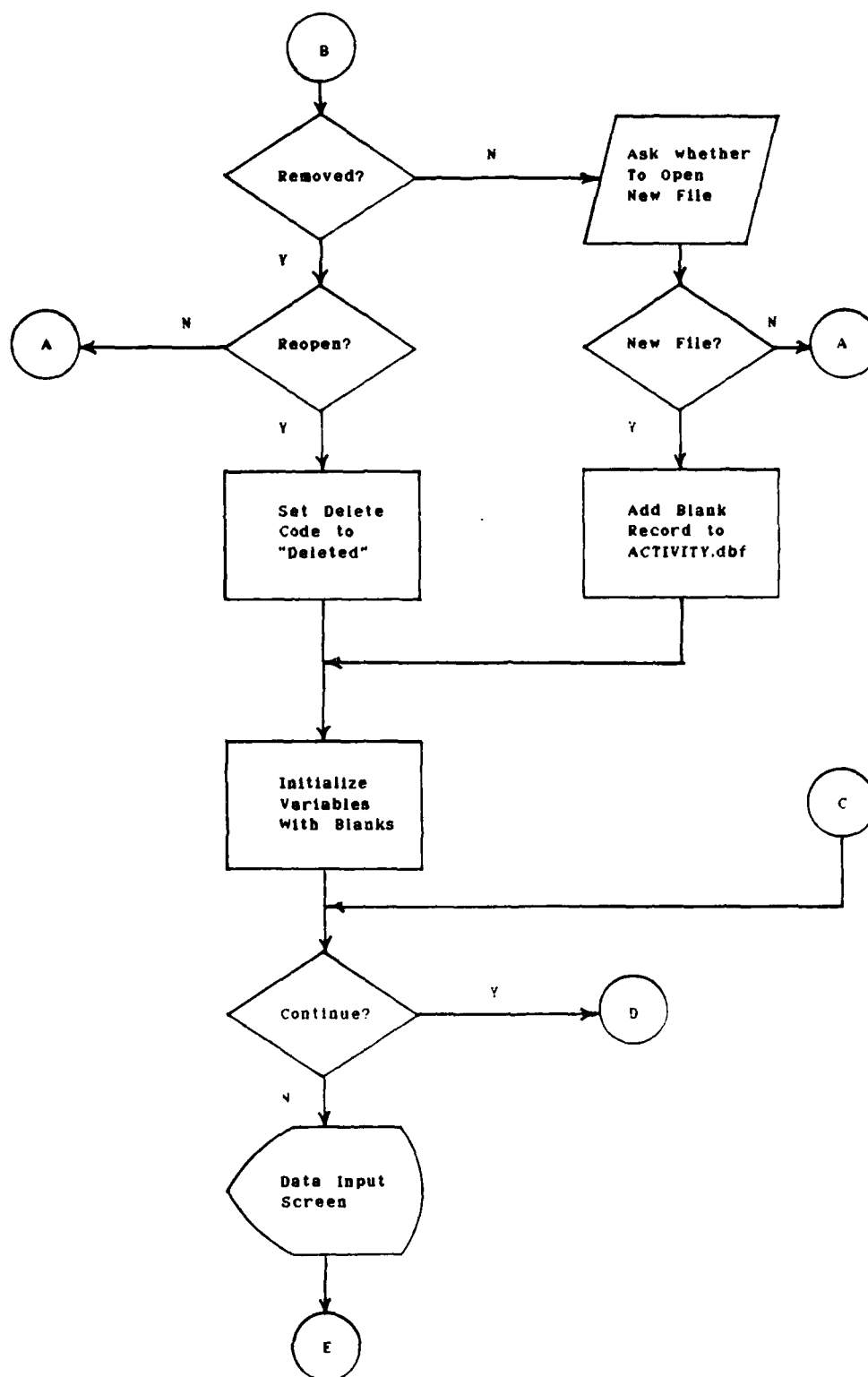


Fig. 27. Continued

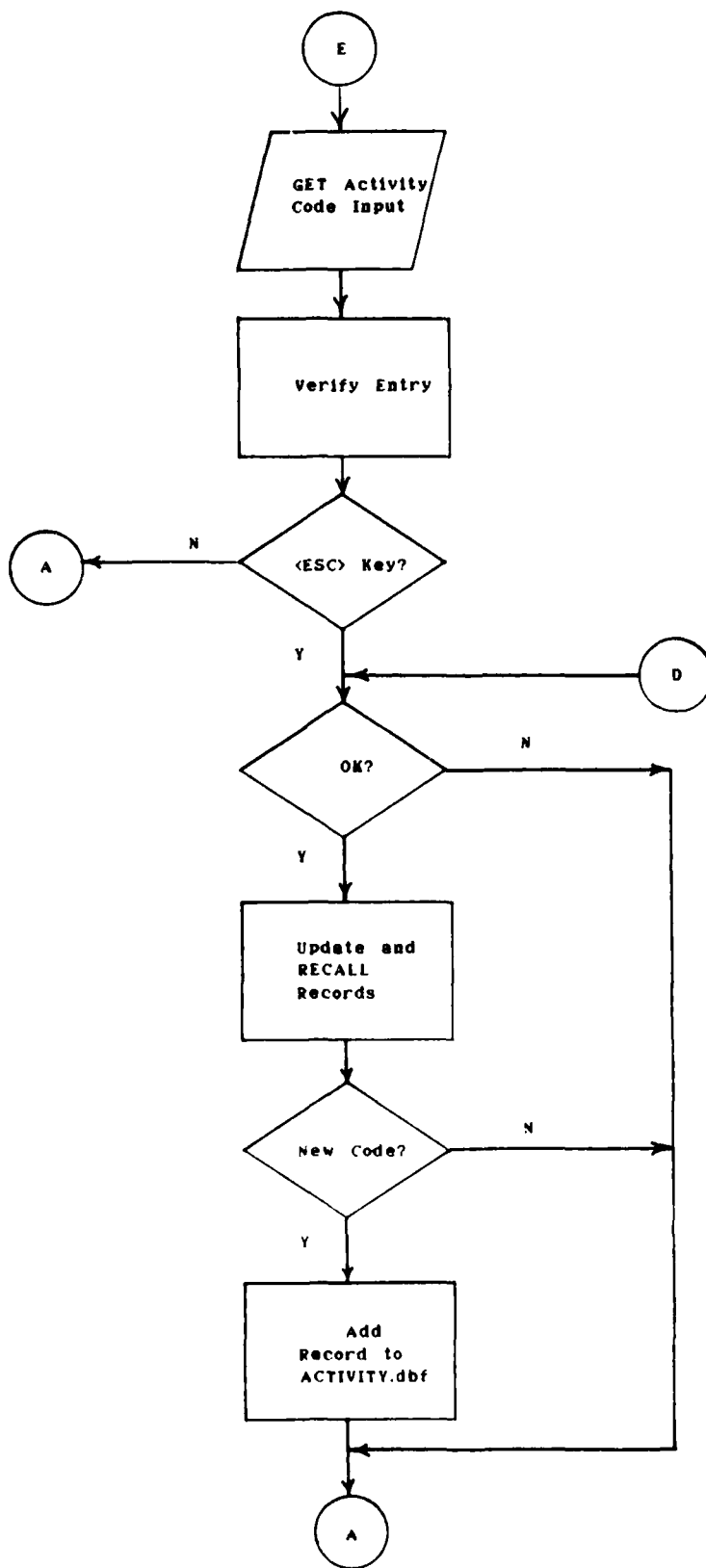


Fig. 27. Continued

Change or Add to Unit Identification Code (UIC) Records. From the Change Data Base Selection Menu, option <4> will enter the submodule to change or add to the UIC data base, and open UIC.dbf and all related indexes. This data base is used to automatically provide ship names and hull numbers in relation to UICs in the reports. The user is first asked for the five-digit UIC to change, on the screen shown in Figure 28. An entry of <RETURN> will close all open database files and bring the user back to the data base selection menu (Figure 7). It is not necessary that the user know whether or not the record is in the database.

HOTLIST Report Program Add To or Change UICs
Enter UIC:
To return to menu, just press <RETURN>

Fig. 28. UIC Query Screen

UIC inputs accepted may only be numbers. Upon entry, the program looks for the file with that UIC.

If the UIC is not in the database, the user is informed, and given the opportunity to create a new record, as shown in Figure 29.

HOTLIST Report Program Add To or Change UICs
Enter UIC: 99999
UIC not found.
Do you want to create a new record? (Y or N)
Y

Fig. 29. UIC Not Found Screen

Only the entries <Y>, <N>, and <RETURN> are accepted by the computer. If the user enters <N>, the UIC query screen (Figure 28) is returned to allow entry of another record. The default answer is preset at <Y>, so either <Y> or <RETURN> will bring up a data input screen, as shown in Figure 30.

HOTLIST Report Program Add or Update UICs	
UIC: 04720	Name of Ship: USS CANOPUS
Type of Ship (SSBN, SSN, AS, etc.): AS	Hull Number: 34
Is input OK? (Y or N) (<ESC> to QUIT) N	

Fig. 30. UIC Input/Update Screen

If the UIC was found in the data base, but has been given an "Inactive" status through the "Remove Records" module, the screen will show that status, as shown in Figure 31. The default input for this screen is <N>, as a <Y> will delete information in that record and present a screen that looks like the one in Figure 30, with blank data fields. If the record was found, the record will be displayed for edit, as in Figure 30. In this screen, "Name of Ship" inputs may be up to twenty alpha-characters, and they will all be automatically capitalized. For the "Type of Ship" entry, an entry up to four alpha-characters is allowed, and all letters will be automatically capitalized. "Hull number" is a numeric-only entry of up to three numbers. Entry verification works the

same way it does in the HOTCHG.prg module (as described following Figure 16). The verification line is shown in Figure 30.

HOTLIST Report Program Add To or Change UICs
Enter UIC: 04720
This UIC has been deleted from current files. Do you want to use it anyway? (Y or N)
WARNING: Data presently in record will be lost unless record is 'Undeleted' first using 'Delete or Undelete Records' Module.
N

Fig. 31. UIC Inactive Screen

A flow chart of the submodule to change or add to UIC records (UIC-CHG.prg) is shown in Figure 32.

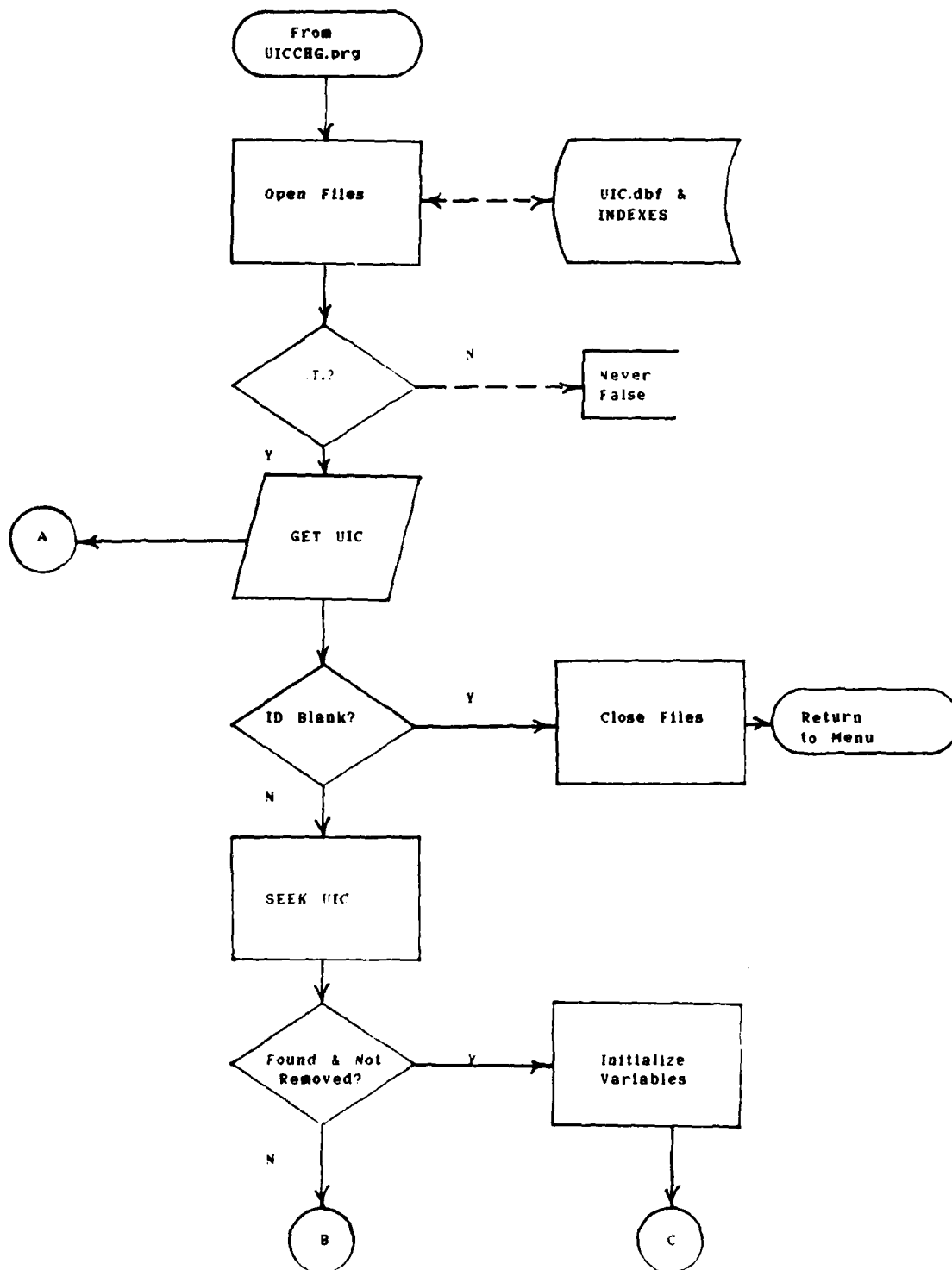


Fig. 32. UICCHG.prg Flow Chart

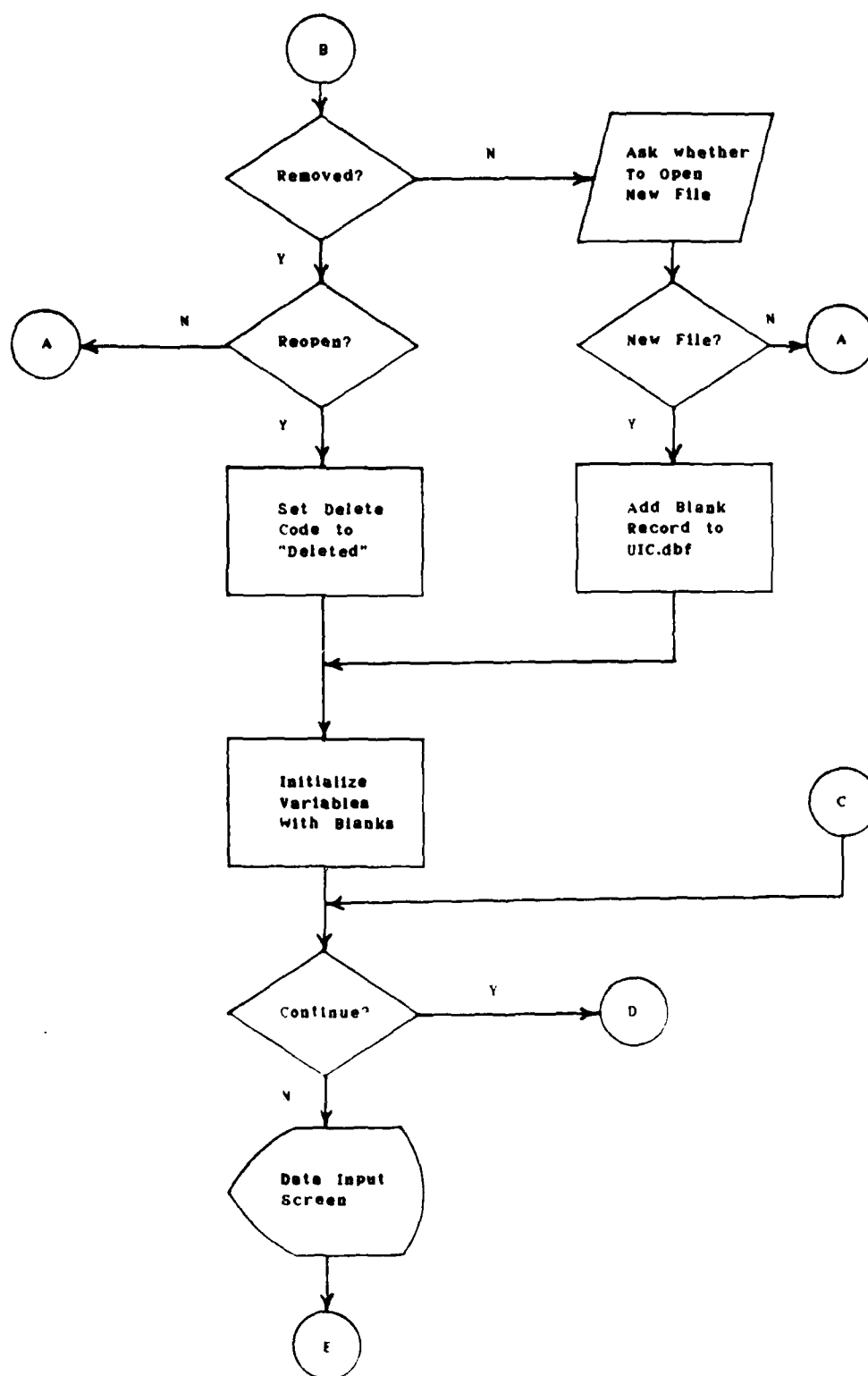


Fig. 32. Continued

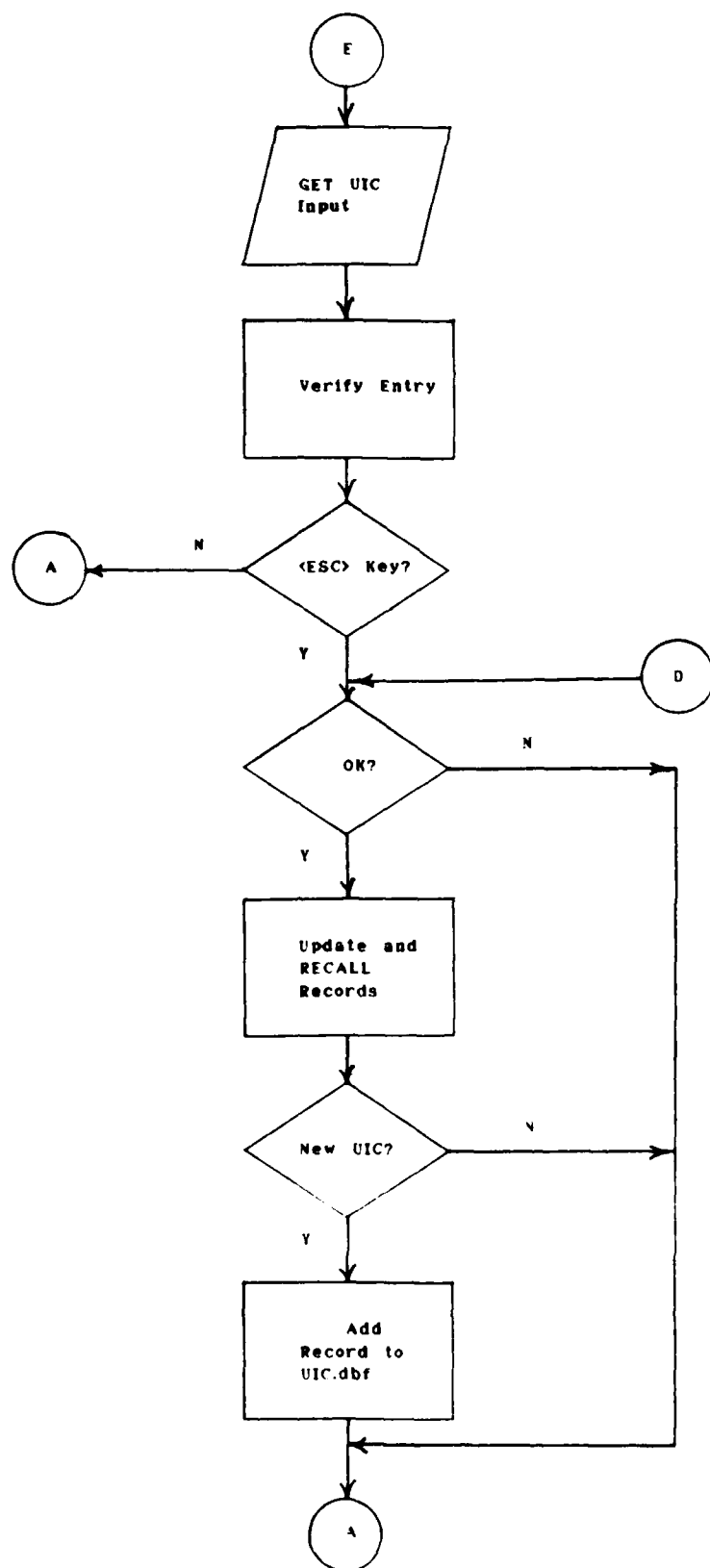


Fig. 32. Continued

Remove or Replace Records In a Data Base

A selection of <2> from the Main Menu moves the user to the menu screen shown in Figure 33. This menu operates in an identical manner to the DATAHG.prg menu. Selection of <0>, <RETURN>, or <ESC> will move the user back to the previous screen, the Main Menu.

HOTLIST Report Program Remove and Reactivate Data Base Records	
Select the Data Base you want to Work With	
[1]	HOTLIST
[2]	Supply Status Codes
[3]	Action Activity Codes
[4]	U I C s
[0]	Return to Main Menu
Enter Choice (0-4): 0	

Fig. 33. DATADEL.prg Remove/Replace Records Selection Menu

Selection of a specific data base will move the user to the beginning of one of the submodules that are displayed in the chart in Figure 34.

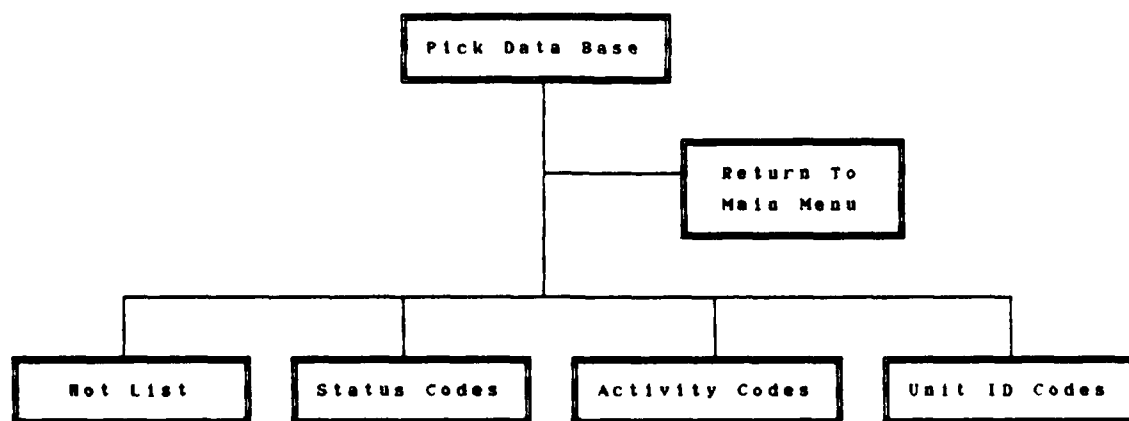


Fig. 34. DATADEL.prg Organization

From the DATADEL.prg menu, the user is given the choice of removing records (placing them in an inactive status), or replacing them (returning them to an active status). Placing them in an inactive status prohibits inclusion of those records in the HOTLIST reports, or in the outstanding NIIN report. This is required so that the reports only reflect current, unfilled requirements. The need may arise, however, to reactivate the records if the delivery is found to be incomplete, and the records should also be retained for management purposes. One Tender currently has a procedure that involves analyzing past Hot List requirements in an effort to prevent future occurrences (2).

The logic used in the DATADEL.prg menu program follows the same steps as that used in DATACHG.prg, as shown in the flow chart in Figure 35.

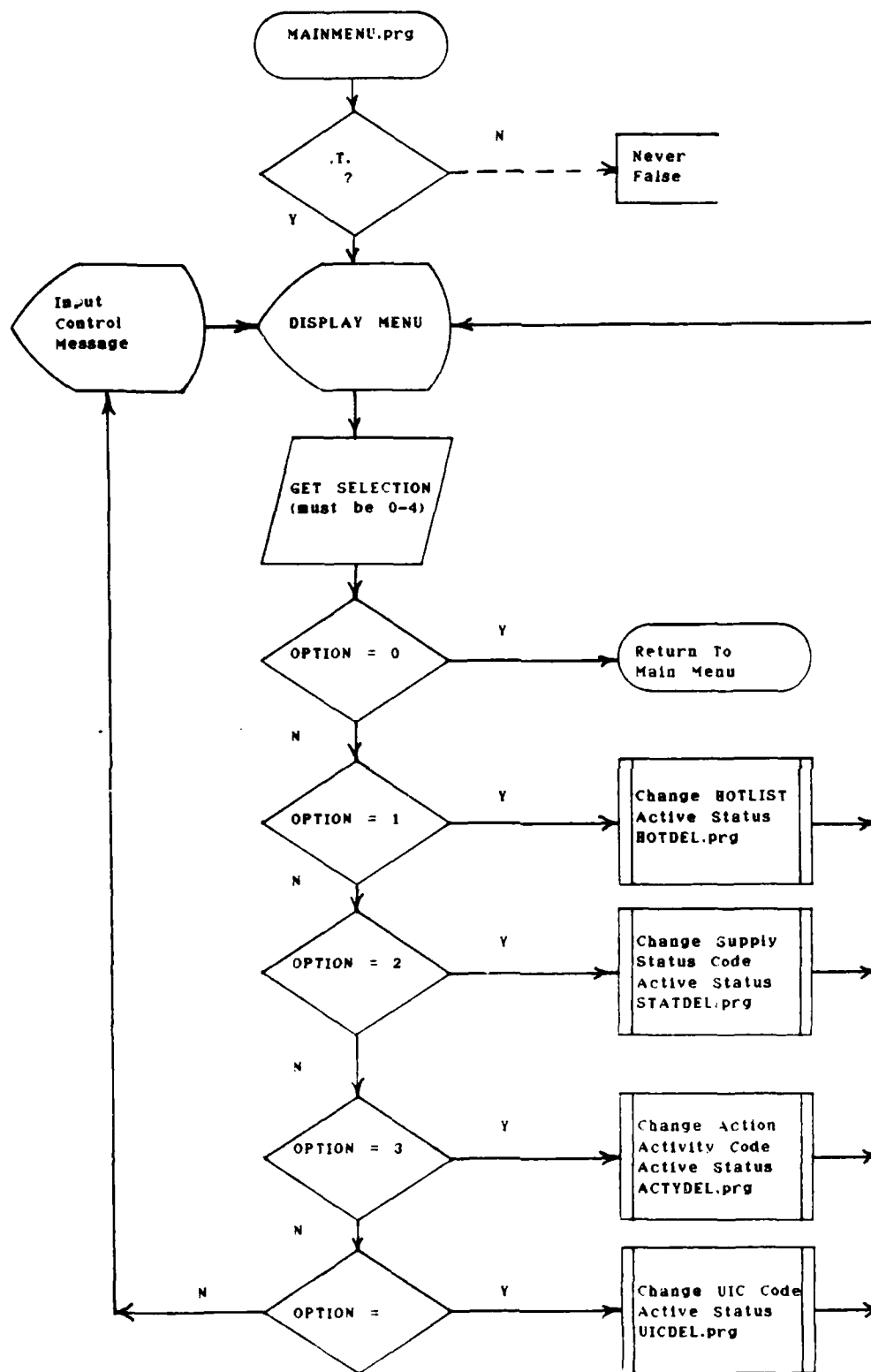


Fig. 35. DATADEL.prg Flow Chart

HOTLIST Report Program Remove or Reactivate Records from HOTLIST
Enter Requisition Julian Date: 9999
Enter Four-digit Requisition Serial Number:

Fig. 37. Requisition Serial Query Screen

If the record requested does not exist on the data base, the user is given the message shown in Figure 38. Upon pressing a key, the user is provided with a clear Julian date entry screen.

HOTLIST Report Program Remove or Reactivate Records from HOTLIST
Enter Requisition Julian Date: 9999
Enter Four-digit Requisition Serial Number: W999
That requisition number is not on the HOTLIST
Press any key to continue

Fig. 38. Requisition Not Found Screen

If the requisition is in the data base, either in an "inactive" or an "active" status, the record is then displayed for the examination of the user.

If the record is inactive, the user is asked if he or she wishes to reactivate it, as shown in Figure 39. A reply of <Y>, <RETURN> or <ESC> will return the record to an active status. A reply of <N> will place the record in an inactive status.

<p align="center">HOTLIST Report Program Remove or Reactivate HOTLIST Records</p>		
<p align="center">Requisition Information</p> <p>UIC: 04720 JULIAN DATE: 9999 SERIAL #: W999 NIIN: 00-215-8442 PRIORITY (Use X for spec. exp.): 1 NOMENCLATURE: NUT LOCKING QTY: 25 U/I: DZ ENDUSER: B DIV NIS/PNIS/NC/NS: NIS TSN: 6273</p>		
<p align="center">Job Information</p> <p>JOB NAME: #1 MG WORK CENTER: EA01 JSN: 0293</p>		
<p align="center">Status Information</p> <p>STATUS CODE: BV ACTION ACTIVITY: S9I REMARKS (Contract Number, ESD, EDD, etc.): ESD 14 Jun 87. Contract No. N00002-86-M-5183. Air shipment expected</p>		
<p align="center">RECORD IS CURRENTLY INACTIVE. WANT TO REACTIVATE? (Y or N) Y</p>		

Fig. 39. HOTDEL.prg Record Inactive Screen

Removing an active record is more complex, to prevent inadvertent removal of current records. Initially, the record is brought up for examination of the viewer, as with those to be reactivated, and the user is informed of the record's "active" status. The user is given the opportunity to reply with an <N>, <ESC>, or <RETURN>, any of which will return them to the Julian date input screen. If the user presses <Y>, the question, "Are you sure?" will be added to the screen, as shown in Figure 40. Again, a reply of <N>, <ESC>, or <RETURN>, will return the user to the Julian date input screen, with no change to the status of the record. A reply of <Y> will put the record into an "inactive" status, and the user will be informed by a message at the bottom of the screen, as shown in Figure 41.

HOTLIST Report Program Remove or Reactivate HOTLIST Records		
Requisition Information UIC: 04720 JULIAN DATE: 9999 SERIAL #: W999 NIIN: 00-215-8442 PRIORITY (Use X for spec. exp.): 1 NOMENCLATURE: NUT LOCKING QTY: 25 U/I: DZ ENDUSER: B DIV NIS/PNIS/NC/NS: NIS TSN: 6273		
Job Information JOB NAME: #1 MG WORK CENTER: EA01 JSN: 0293		
Status Information STATUS CODE: BV ACTION ACTIVITY: S9I REMARKS (Contract Number, ESD, EDD, etc.): ESD 14 Jun 87. Contract No. N00002-86-M-5183. Air shipment expected		
RECORD IS CURRENTLY ACTIVE. WANT TO REMOVE? (Y or N) Y Are you SURE? (Y or N) N		

Fig. 40. HOTDEL.prg Record Active Screen

HOTLIST Report Program Remove or Reactivate HOTLIST Records		
Requisition Information UIC: 04720 JULIAN DATE: 9999 SERIAL #: W999 NIIN: 00-215-8442 PRIORITY (Use X for spec. exp.): 1 NOMENCLATURE: NUT LOCKING QTY: 25 U/I: DZ ENDUSER: B DIV NIS/PNIS/NC/NS: NIS TSN: 6273		
Job Information JOB NAME: #1 MG WORK CENTER: EA01 JSN: 0293		
Status Information STATUS CODE: BV ACTION ACTIVITY: S9I REMARKS (Contract Number, ESD, EDD, etc.): ESD 14 Jun 87. Contract No. N00002-86-M-5183. Air shipment expected		
Record has been removed. Press any key to continue		

Fig. 41. HOTDEL.prg Removal Completed Screen

A flow chart of the submodule to remove or replace HOTLIST records (HOTDEL.prg) is shown in Figure 42.

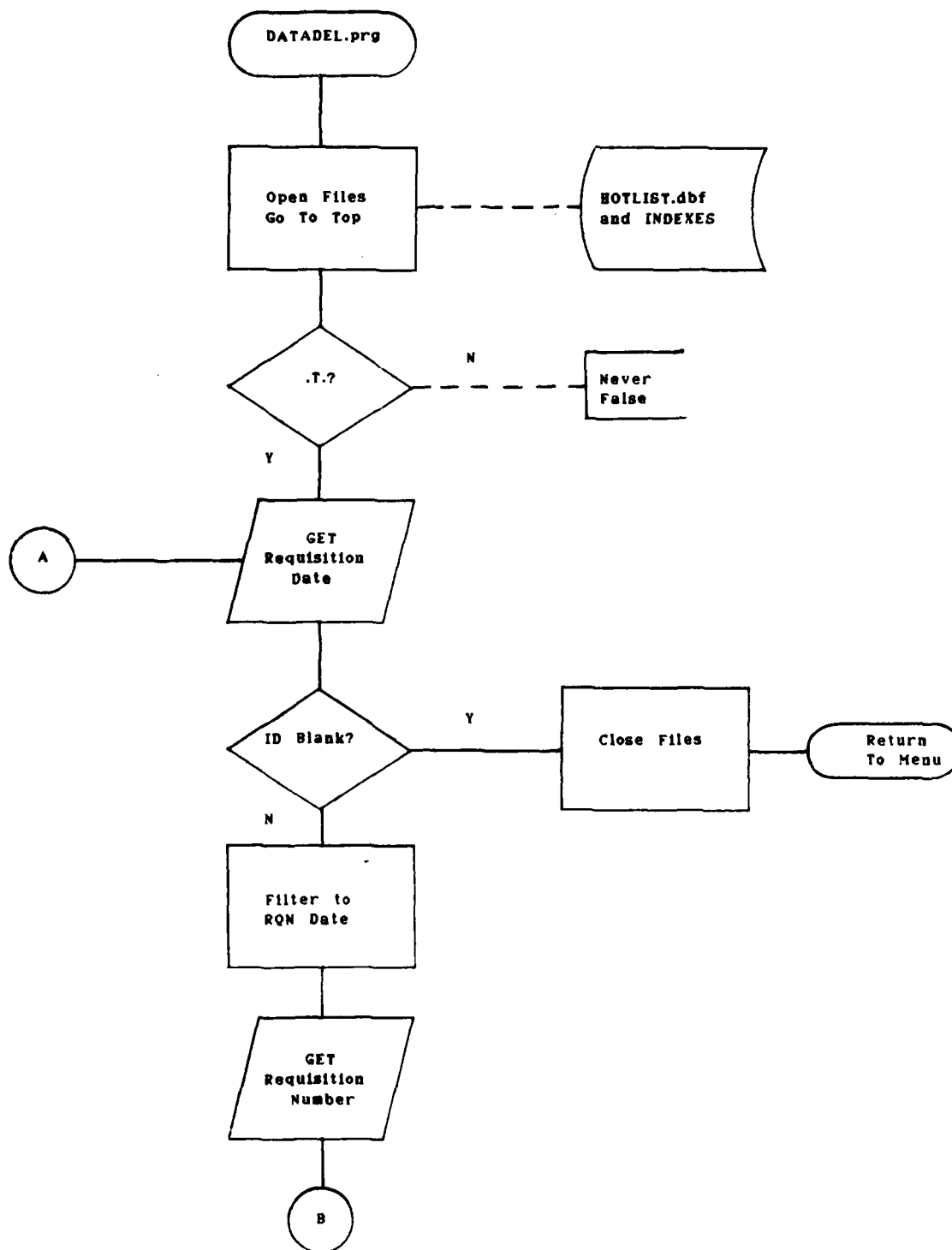


Fig. 42. HOTDEL.prg Flow Chart

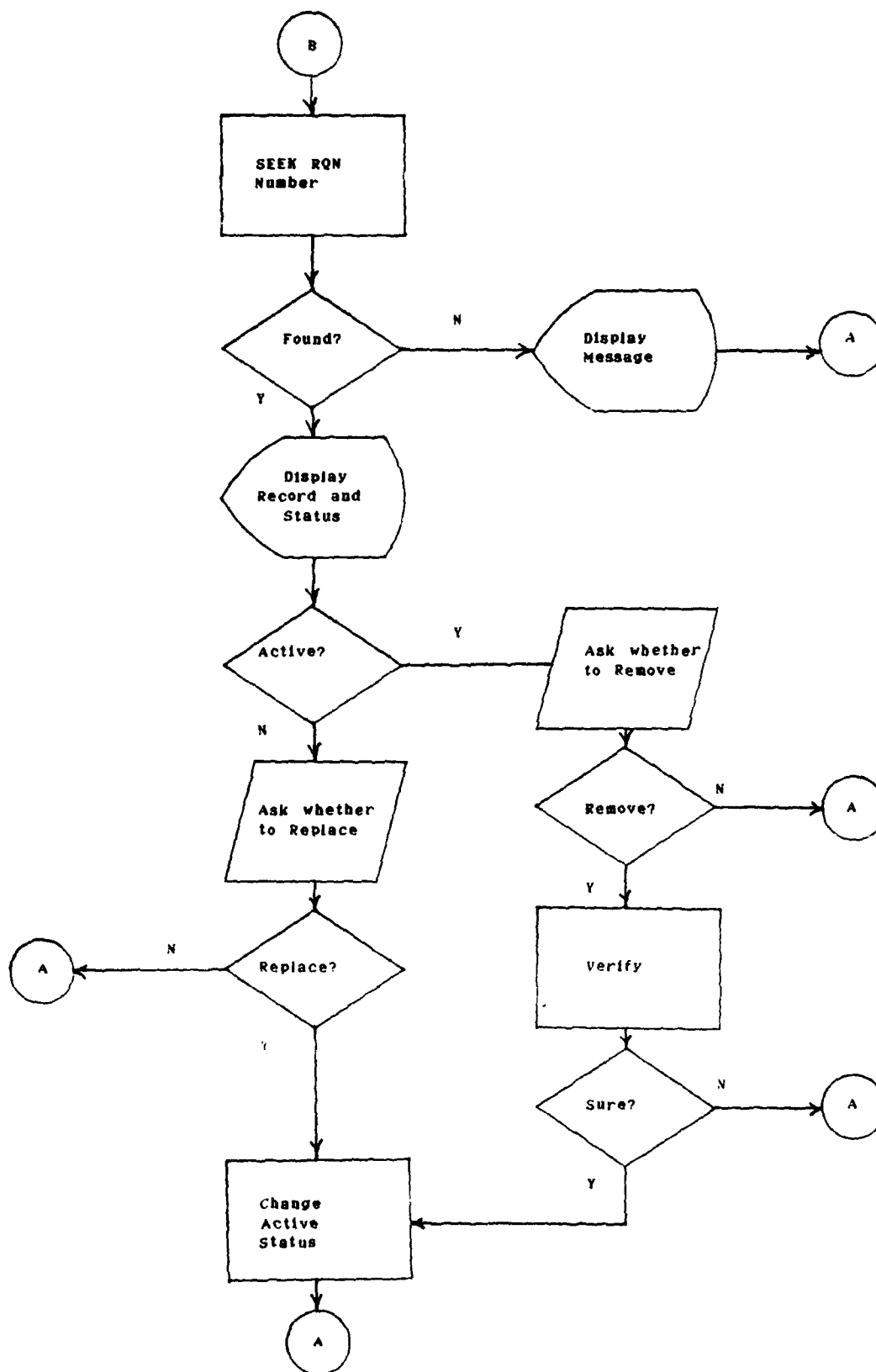


Fig. 42. Continued

Remove or Replace Supply Code Records. From the Remove/Replace Records Menu, the other three data bases may also be accessed for this purpose. It is unlikely that these data bases will require more than occasional management of this type, but there may be occasion that requires the user to render one of the records inactive. Supply status codes may be created for local use, then deactivated as they are replaced by service wide codes with the same message. Action Activities may become deactivated. UICs may be associated with ships that are decommissioned. Part of the program operates by associating the supported unit's hull number (from the UIC.dbf Data Base) with the name of the ship. Although highly unlikely, there may, at some time, be a situation where a Tender supports a non-SSBN ship that has a hull number that is the same as one of the ships on the data base. As it is even more unlikely that the Tender would be also supporting that SSBN at the same time, the user would be able to create the new hull number record, and remove the old one, allowing the program to support the special unit.

Figures 43, 44, and 45 show input screens for each of the data bases.

Figures 46, 47, and 48 show the message provided when the record cannot be found in the data base. In each case, pressing a key following these screens returns the user to a blank input screen for that data base.

Figures 49 through 54 show the screen sequence for the three data bases when the record has been found in an inactive status, and the user desires to reactivate that record.

Figures 55 through 60 show the screen sequence for the three data bases when the record has been found in an active status, and the user desires to remove that record.

<p>HOTLIST Report Program Remove or Reactivate STATUS CODE Records</p>
<p>Enter Status Code:</p> <p>To Return to Menu, just press <RETURN></p>

Fig. 43. Status Code Record Input Screen

<p>HOTLIST Report Program Remove or Reactivate ACTION ACTIVITY CODE Records</p>
<p>Enter Action Activity Code:</p> <p>To Return to Menu, just press <RETURN></p>

Fig. 44. Action Activity Record Input Screen

<p>HOTLIST Report Program Remove or Reactivate UIC Records</p>
<p>Enter UIC:</p> <p>To Return to Menu, just press <RETURN></p>

Fig. 45. UIC Record Input Screen

<p>HOTLIST Report Program Remove or Reactivate STATUS CODE Records</p>
<p>Enter Status Code: CL</p> <p>To Return to Menu, just press <RETURN></p> <p>That status code is not on the file</p>
<p>Press any key to continue</p>

Fig. 46. Status Code Record Not Found Screen

<p>HOTLIST Report Program Remove or Reactivate ACTION ACTIVITY CODE Records</p>
<p>Enter Action Activity Code: NRL</p> <p>To Return to Menu, just press <RETURN></p> <p>That action activity code is not on the file</p>
<p>Press any key to continue</p>

Fig. 47. Action Activity Record Not Found Screen

<p>HOTLIST Report Program Remove or Reactivate UIC Records</p>
<p>Enter UIC: 99999</p> <p>That UIC is not on the file, just press <RETURN></p>
<p>Press any key to continue</p>

Fig. 48. UIC Record Not Found Screen

<p>HOTLIST Report Program Remove or Reactivate STATUS CODE Records</p>
<p>Status Code: CJ</p> <p>Leading Service (Navy, Army, All, Etc): All</p> <p>Description of Status:</p> <p>Rejected; obsolete. Request sub on new doc or same item on 1348-6.</p>
<p>CODE IS CURRENTLY INACTIVE. WANT TO REACTIVATE? (Y or N) Y</p>

Fig. 49. Status Code Record Inactive Screen

<p>HOTLIST Report Program Remove or Reactivate STATUS CODE Records</p>
<p>Status Code: CJ</p> <p>Leading Service (Navy, Army, All, Etc): All</p> <p>Description of Status:</p> <p>Rejected; obsolete. Request sub on new doc or same item on 1348-6.</p>
<p>Code has been reactivated. Press any key to continue</p>

Fig. 50. Status Code Reactivate Verification Screen

<p>HOTLIST Report Program Remove or Reactivate Action Activity Code Records</p>
<p>Action Activity Code: NRZ</p> <p>Name of Action Activity: NSC Charleston</p>
<p>CODE IS CURRENTLY INACTIVE. WANT TO REACTIVATE? (Y or N) Y</p>

Fig. 51. Action Activity Record Inactive Screen

<p>HOTLIST Report Program Remove or Reactivate Action Activity Code Records</p>
<p>Action Activity Code: NRZ</p> <p>Name of Action Activity: NSC Charleston</p>
<p>Code has been reactivated. Press any key to continue</p>

Fig. 52. Action Activity Reactivate Verification Screen

HOTLIST Report Program Remove or Reactivate UIC Records	
UIC: 04720	Name of Ship: USS CANOPUS
Type of Ship (SSBN, SSN, AS, etc.): AS	Hull Number: 34
UIC IS CURRENTLY INACTIVE. WANT TO REACTIVATE? (Y or N) Y	

Fig. 53. UIC Record Inactive Screen

HOTLIST Report Program Remove or Reactivate UIC Records	
UIC: 04720	Name of Ship: USS CANOPUS
Type of Ship (SSBN, SSN, AS, etc.): AS	Hull Number: 34
UIC has been reactivated. Press any key to continue	

Fig. 54. UIC Reactivate Verification Screen

HOTLIST Report Program Remove or Reactivate STATUS CODE Records
 Status Code: CJ Leading Service (Navy, Army, All, Etc): All Description of Status: Rejected; obsolete. Request sub on new doc or same item on 1348-6.
CODE IS CURRENTLY ACTIVE. WANT TO REMOVE? (Y or N) Y Are you SURE? (Y or N) N

Fig. 55. Status Code Record Active Screen

HOTLIST Report Program Remove or Reactivate STATUS CODE Records
 Status Code: CJ Leading Service (Navy, Army, All, Etc): All Description of Status: Rejected; obsolete. Request sub on new doc or same item on 1348-6.
Code has been removed. Press any key to continue

Fig. 56. Status Code Remove Verification Screen

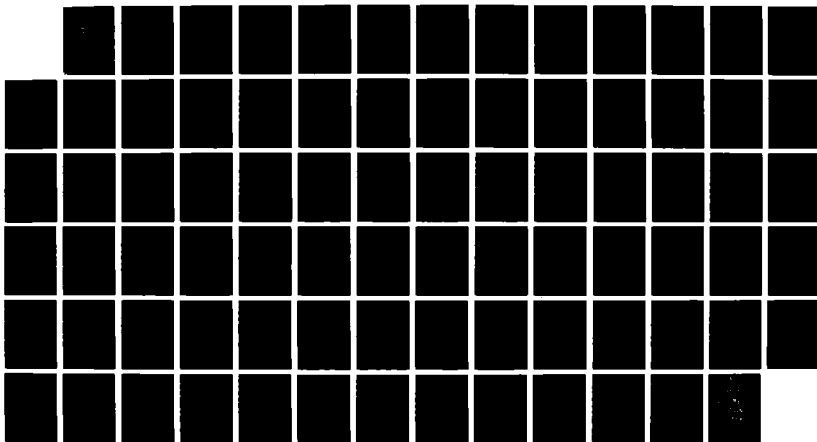
AD-A186 677

SUPPLY HOTLIST REPORT GENERATION FOR FLEET BALLISTIC
MISSILE SUBMARINE MA. (U) AIR FORCE INST OF TECH
WRIGHT-PATTERSON AFB OH SCHOOL OF SYST.. C C SMITH
SEP 87 AFIT/GLH/LSH/875-78 F/G 15/5

2/2

UNCLASSIFIED

NL





MICROCOPY RESOLUTION TEST CHART
— NATIONAL BUREAU OF STANDARDS-1963-A

HOTLIST Report Program Remove or Reactivate Action Activity Code Records
 Action Activity Code: NRZ Name of Action Activity: NSC Charleston
CODE IS CURRENTLY ACTIVE. WANT TO REMOVE? (Y or N) N

Fig. 57. Action Activity Record Active Screen

HOTLIST Report Program Remove or Reactivate Action Activity Code Records
 Action Activity Code: NRZ Name of Action Activity: NSC Charleston
Code has been removed. Press any key to continue

Fig. 58. Action Activity Remove Verification Screen

HOTLIST Report Program Remove or Reactivate UIC Records	
UIC: 04720	Name of Ship: USS CANOPUS
Type of Ship (SSBN, SSN, AS, etc.): AS	Hull Number: 34
UIC IS CURRENTLY ACTIVE. WANT TO REMOVE? (Y or N) Y Are you SURE? (Y or N) N	

Fig. 59. UIC Record Active Screen

HOTLIST Report Program Remove or Reactivate UIC Records	
UIC: 04720	Name of Ship: USS CANOPUS
Type of Ship (SSBN, SSN, AS, etc.): AS	Hull Number: 34
UIC has been removed. Press any key to continue	

Fig. 60. UIC Remove Verification Screen

The flow chart shown in Figure 61 is appropriate for any of these data bases: STATUS.dbf, ACTIVITY.dbf, or UIC.dbf.

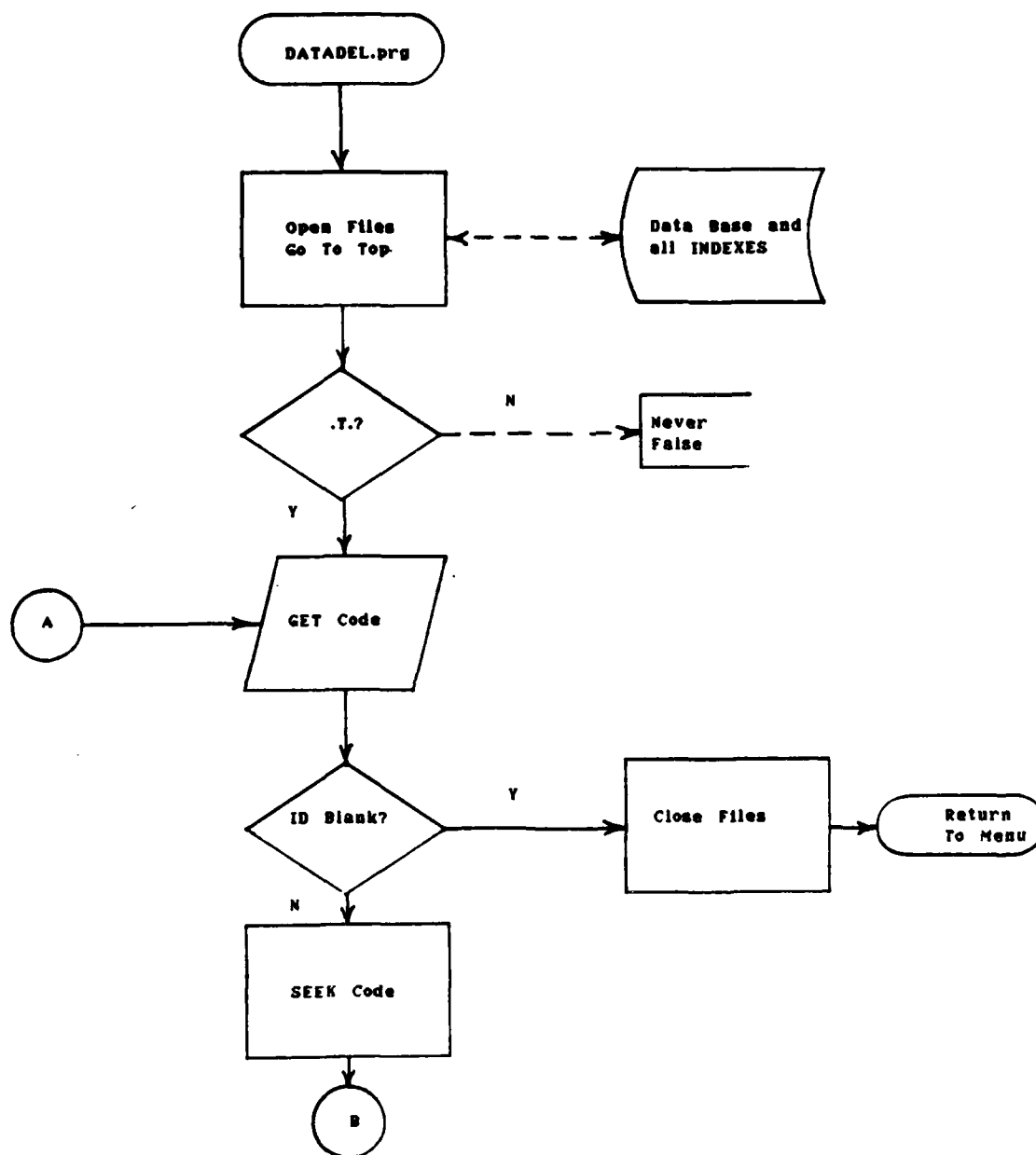


Fig. 61. STATDEL.prg, ACTYDEL.prg, UICDEL.prg Flow Charts

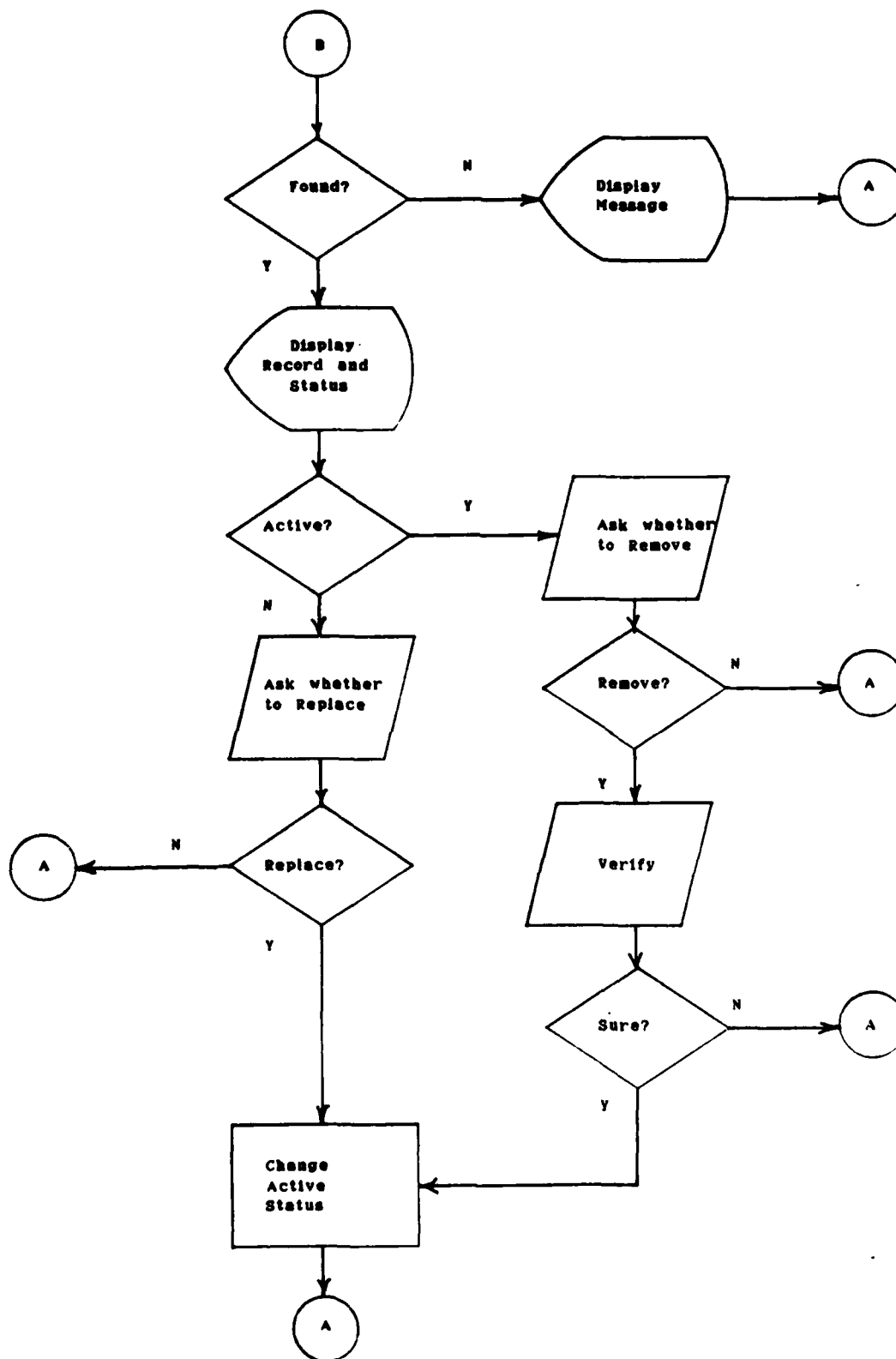


Fig. 61. Continued

Translate Supply Codes To Plain English

The third option (from the Main Menu key <3>) performs a special operation. Records for the HOTLIST are maintained in a file called HOTLIST.dbf. This file includes data that was input by the user, as well as plain-English translations of supply codes and ship identifications. It is the RELATE.prg module that performs the actions of drawing information from the STATUS.dbf, ACTIVITY.dbf, and UIC.dbf files, and translating those codes, as well as priority numbers and codes, to plain-English.

RELATE.prg must be run before printing any reports. Because of the lengthy amount of time that the translations may take, for the convenience of the user, the module may be called up from two locations in the program. Selection <3> from the Main Menu will place the user into the module. In case the user has forgotten to run the module before going to the Print module, there is another opportunity to run it directly from the Print module. Running this module has not been made automatic, since the user may simply desire to reenter the program and print a report without making changes to the data base, and the time involved in running the module would be very inconvenient, possibly deterring the user from taking full advantage of the program's capabilities.

When the user calls up the RELATE.prg module from either location, he or she is first provided with the screen shown in Figure 62. This screen informs the user of the module they have entered, and provides the opportunity to return to the previous menu without running the module. An entry of <0>, <ESC>, or <RETURN> will return the user to the menu from which they entered the RELATE.prg module. An entry of <1> will start the subprogram. No further action is required from the user until the program has finished.

HOTLIST Report Program Translate Supply Codes to Plain English
<p>This Choice will translate all supply codes (such as status and action activity codes) to plain English for input to management and HOTLIST reports</p> <p>Choose Desired Action</p> <p>[1] Prepare Database for Reports</p> <p>[0] Return to Previous Menu</p>
Enter Choice (0 or 1): 0

Fig. 62. RELATE.prg Entry Screen

At this point, the program goes through several steps. Before going any further, the screen in Figure 63 is displayed, and it remains on the screen until the subprogram is complete.

When this is complete, a similar operation is performed on the HOTLIST records, using a work area consisting of the UIC.dbf file and its indexes. In this section, the program looks at the enduser variable in each record, and provides the record with the ship's name, type, and hull number. This takes two passes through the HOTLIST, as the Tender's own jobs are identified through a different coding system than those of supported units.

HOTLIST Report Program
Translate Supply Codes to Plain English

All translations are completed for all records.

Press any key to return to Previous Menu.

Fig. 64. RELATE.prg Translations Completed Screen

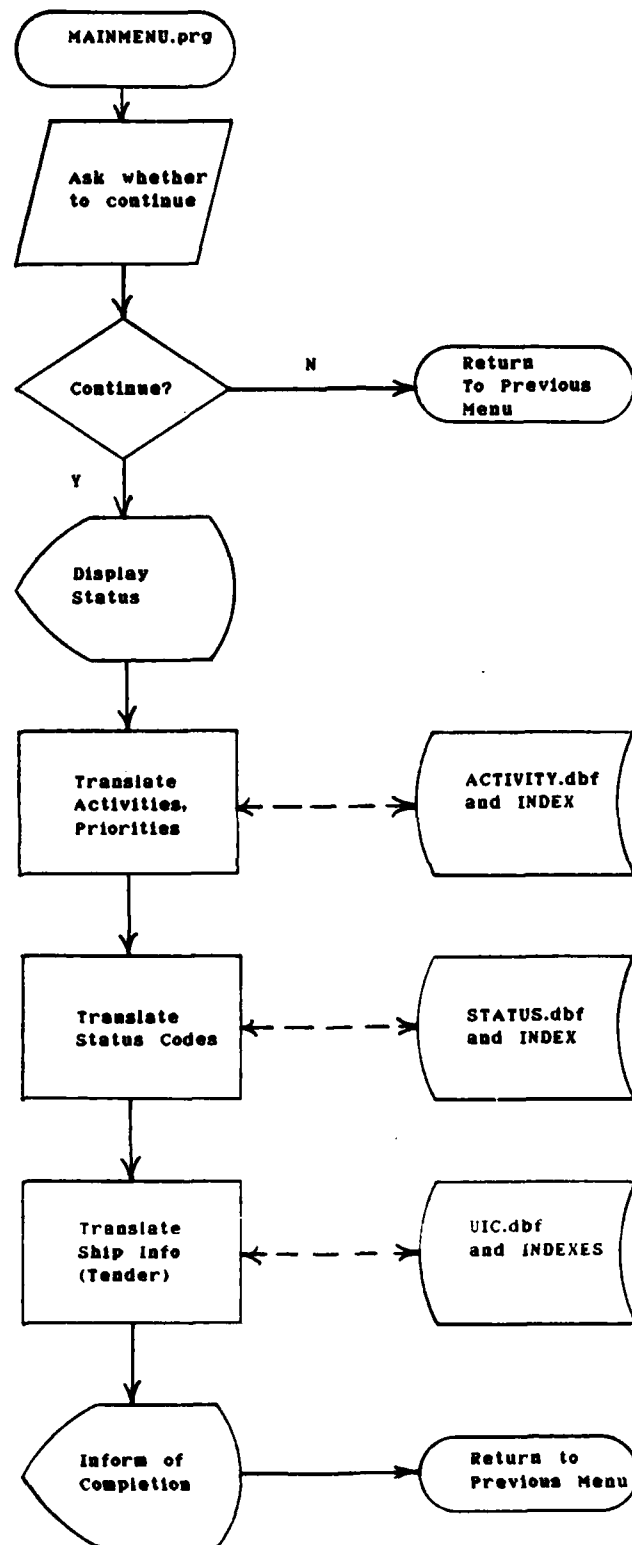


Fig. 65. RELATE.prg Flow Chart

Print Reports

The final module of the HOTLIST Report Program is the module to Print Reports. A selection of <4> from the Main Menu will move the user into this module, where he or she is given the opportunity to print any of five reports. The organization of the module is shown in Figure 66.

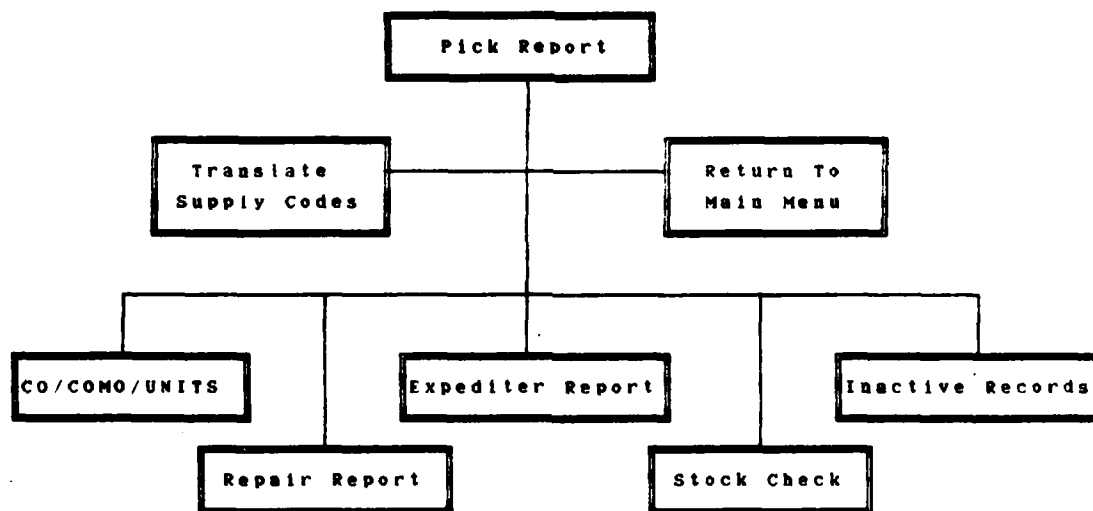


Fig. 66. LISTREPS.prg Organization

Upon entry to this module, the user is presented with the input screen shown in Figure 67. The user is informed that the module to translate supply codes (RELATE.prg) must be run before printing reports. The default entry to this screen is <1>, so an entry of <1>, <ESC>, or <RETURN> will move the user to the RELATE.prg module. When that module has finished running, the user will be automatically returned to the screen in Figure 67. A selection of <0> from this screen will return the user to the Main Menu. A selection of <2> will move the user to the menu screen shown in Figure 68. It is from this menu that the user may select the report desired.

HOTLIST Report Program Report Printing Module
<p>This module is designed to automatically print reports that are needed for management meetings and requisition expediting.</p> <p>Before printing reports, you must run the 'Translate' module to ensure that all information has been added to the records.</p> <p>[1] Translate Supply Codes</p> <p>[2] Print Reports</p> <p>[0] Exit to Main Menu</p>
Enter choice (0-2): 1

Fig. 67. LISTREPS.prg Entry Screen

HOTLIST Report Program Print Reports
<p>Select the report you want to print</p> <p>[1] CO / COMO / UNITS (top-level information)</p> <p>[2] Repair Department (sorted by work center)</p> <p>[3] Expediter (sorted by action activity)</p> <p>[4] Stock Check (sorted by stock status, NIIN)</p> <p>[5] Inactive Records (sorted by stock status, NIIN)</p> <p>[0] Return to Main Menu</p>
Enter Choice (0-5): 0

Fig. 68. LISTREPS.prg Menu Screen

The choice of <1> from this menu will generate the primary report: the report for the CO, Commodore, tended units, and other participants in REFIT management meetings. This report lists each active requisition, grouped by tended unit, and subgrouped within those by priority. Supply codes are translated into plain English, and each page is topped by a header that includes the date, page number, and a list of which fields are shown in which locations. A sample report is shown in Figure 69.

Page no. 2		HOT LIST Requisition Status		08/26/87	
REQUISITION NO. ACTION COMMAND	NOMENCLATURE	STOCK NBER EQUIPMENT	QTY JSN	UI	
CARD					
			1	EA	
			MK 9 MOD 0 ANAL W401-5342		
procurement.					
CARD					
			1	EA	
			MK 9 MOD 0 ANAL W401-5342		
tive to application/ID/tech data					
TOR VALVE					
			3	EA	
			HP-AIR FA02-1093		
SOLenoid					
			3	EA	
			HP-ATR FA02-1093		
-86 M-7162. Shipping by truck.					
STEEL					
			25	EA	
			01 846 5736 FA01-3546		
stock.					
LOCKING					
			25	DZ	
			00-215-8442 FA01-0293		
6-M-5183. Air shipment expected					

Page no. 1		HOT LIST Requisition Status		08/26/87	
REQUISITION NO. ACTION COMMAND STATUS REMARKS	NOMENCLATURE	STOCK NBER EQUIPMENT	QTY JSN	UI	
USS JOHN ADAMS (SSN 620)					
Priority One Requisitions					
05062-6291-W030	RAIL BEARING	01-183-5589	1	EA	
DISC		OIL PURIFIER	EB01-2736		
Being processed for direct delivery procurement.					
Out for quote/dlv. No est contract award date, as of 6338					
05062-6300-W037	TACHOMETER		1	EA	
DCSC		DRAIN PUMP	EB01-0123		
On contract for direct shipment.					
DLA700-86-M-XF25 ESD 7005					
USS WOODROW WILSON (SSN 624)					
Priority One Requisitions					
05076-6223-W683	STEM BOREHET	01-190-3310	2	EA	
STYC		CRU-60			
On contract for direct shipment.					
ESD 14 Aug 87					
05076-6135-W182	ADAPTER ASSY	00-949-8465	1	EA	
STCC		150 PERISCOPE	NE01-1563		
Item is on backorder or procurement for direct delivery.					
Out for Quote. Update 15 Apr 87					
05076-6223-W638	STEM BOREHET	01-190-3310	2	EA	
DISC		CRU-60	FA01-7283		
Rejected; obsolete. Request sub on new des or same item on 1348-6.					

Fig. 69. Sample CO / COMO / UNIT Report

The Repair Department Report (selection <2> from the Report Menu) has most of the same information from the CO/COMO/UNIT report, but the breakdown is different. To allow distribution between the various Repair work centers, each work center is printed on a different page, grouped by tended unit. Sample Repair Department reports are shown in Figure 70.

Figure 70 displays five overlapping sample Repair Department Reports, each for a different unit (Unit 101 to Unit 105) on the date 08/26/81. The reports are structured as follows:

- Page no. 1 (Unit 101):** Shows a table with columns: REQUESTOR NO., ACTION COMAND, STATUS, PRIORITY, REPAIRATION, STICK SHOP, EQUIPMENT, QTY, and IN. The table contains one entry for Unit 101. Below the table, it lists 'Web Center: 101' and 'Job: 101 101 101 101 101 101'.
- Page no. 2 (Unit 102):** Similar to Page 1, but for Unit 102. It lists 'Web Center: 102' and 'Job: 102 102 102 102 102 102'.
- Page no. 3 (Unit 103):** Similar to Page 1, but for Unit 103. It lists 'Web Center: 103' and 'Job: 103 103 103 103 103 103'.
- Page no. 4 (Unit 104):** Similar to Page 1, but for Unit 104. It lists 'Web Center: 104' and 'Job: 104 104 104 104 104 104'.
- Page no. 5 (Unit 105):** Similar to Page 1, but for Unit 105. It lists 'Web Center: 105' and 'Job: 105 105 105 105 105 105'.

Fig. 70. Sample Repair Department Reports

The Expediter report (selection <3> from the Reports Menu) has a totally different purpose, and thus, a different format. This is a listing of all outstanding requisitions, grouped by the Action Activity responsible for current status. A sample Expediter's Report is shown in Figure 71.

Page no. 1		08/26/87	
HOT LIST Outstanding Requisition List (by Action Activity)			
NIIN	QTY	UI NOMENCLATURE	UNIT NO. REQUISITION NO. TSN
Action Activity Name: NAVFAC			
01-846-5736	25	EA BOLT, STEEL	AS 34 04720-6355-W165 5623
Action Activity Name: SPCC			
01-190-3310	2	EA STEM BONNET	SSBN 624 05076-6223-W683 6453
00-949-8465	1	EA ADAPTER ASSY	SSBN 624 05076-6135-W182 6243
	1	EA BALL VALVE	SSBN 624 05076-6338-WGA1 1524
00-949-8465	1	EA ADAPTER ASSY	0 05076-6235-W182 7362
Action Activity Name: NSC Charleston			
	1	EA CKT CARD	SSBN 644 05715-6335-W114 5243
	3	EA SELECTOR VALVE	AS 34 04720-7024-W637 5362
	3	EA VALVE SOLENOID	AS 34 04720-7024-W638 6453
00-283-4561	1	SH METAL, EXPANDED	AS 34 04720-7197-1234 4523
Action Activity Name: DCSC			
	1	EA TACHOMETER	SSBN 620 05062-6300-W037 0192

Fig. 71. Sample Expediter Report

The next report, much like the expediter's report, is the Stock Check Report. This report is made up of only active requisitions that have stock numbers. The requisitions are broken into the three stock control groups of reasons for non-issue that apply to stock-numbered items: NC (not carried), NIS (not in stock), and P.NIS (partial-not in stock). This list assists the expediters in checking outstanding requirements against stock receipts. A sample Stock Check Report is shown in Figure 72.

Page no. 1	HOT LIST Outstanding NIIN List			08/26/87
NIIN	QTY	UI NOMENCLATURE	UNIT NO.	REQUISITION NO. TSN
The following requisitions were: Not Carried				
00-283-4561	1	SH METAL, EXPANDED AS	34	04720-7197-1234 4523
00-949-8465	1	EA ADAPTER ASSY	0	05076-6235-W182 7362
01-183-5589	1	EA BALL BEARING	SSBN 620	05062-6291-W030 6273
The following requisitions were: Not In Stock				
00-215-8442	25	DZ NUT LOCKING	AS 34	04720-9999-W999 6273
01-190-3310	2	EA STEM BONNET	SSBN 624	05076-6223-W683 6453
01-190-3310	2	EA STEM BONNET	SSBN 624	05076-6223-W638 7823
The following requisitions were: Partial Not In Stock				
00-949-8465	1	EA ADAPTER ASSY	SSBN 624	05076-6135-W182 6243
01-846-5736	25	EA BOLT, STEEL	AS 34	04720-6355-W165 5623

Fig. 72. Sample Stock Check Report

The final type of report is the Inactive Records List (selection <4> from the Report Menu). This report is designed to be used in the management of the data file, and in identifying recurring HOTLIST parts for management purposes. This report lists all inactive requisitions, grouped by stock control non-issue code, and listed in requisition-number order within those groups. A sample Inactive Records list is shown in Figure 73.

Page no. 1	HOT LIST Inactive Records List		08/26/87
NIIN	QTY UI NOMENCLATURE	UNIT NO.	REQUISITION NO. TSN
Reason for non-issue was: NC			
00-637-4625	12 FT ROD	SSBN 628	05702-7002-W253 7382
Reason for non-issue was: NIS			
01-187-6847	1 EA VALVE	SSBN 644	05715-6265-W029 5362

Fig. 73. Sample Inactive Records List

Once a selection has been made of the type of report to print, the user is presented with the screen shown in Figure 74. This screen helps the user ensure that the printer is properly connected and set up prior to attempting to send files to it. Once the user is satisfied that the printer is ready, any key may be pressed to start the print job.

HOTLIST Report Program Printer Check
<p>Please check to make sure that your Printer is READY</p> <p>Please make sure that your printer is turned on, and continuous-form paper is at the top of the form.</p>
<p>Press any key when ready.</p>

Fig. 74. Printer Check Screen

While the printer is printing the report, the screen shown in Figure 75 is displayed, to prevent those in the office from attempting to send commands to the computer before it is ready to receive them. Although only shown here for one of the reports, the subheading (the second line at the top of the screen) changes to indicate the report being printed.

HOTLIST Report Program											
Print NIIN lists of Inactive Requisitions											
*****	*****	*	*	*	*****	*	*	*	*****		
*	*	*	*	*	**	*	*	**	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*
*****	*****	*	*	*	*	*	*	*	*	*	***
*	*	*	*	*	**	*	*	*	**	*	*
*	*	*	*	*	*	*	*	*	*	*	*****

Please Stand By

Fig. 76. Report Printing Screen

Flow charts of LISTREPS.prg, and the five supplementary programs (CO-RPT.prg to print top level reports, RPRRPT.prg to print RPPO reports, EXP-RPT.prg to print expediter reports, NIINRPT.prg to print stock check reports, and DELRPT.prg to print inactive requisition reports) are shown in Figures 76 through 81.

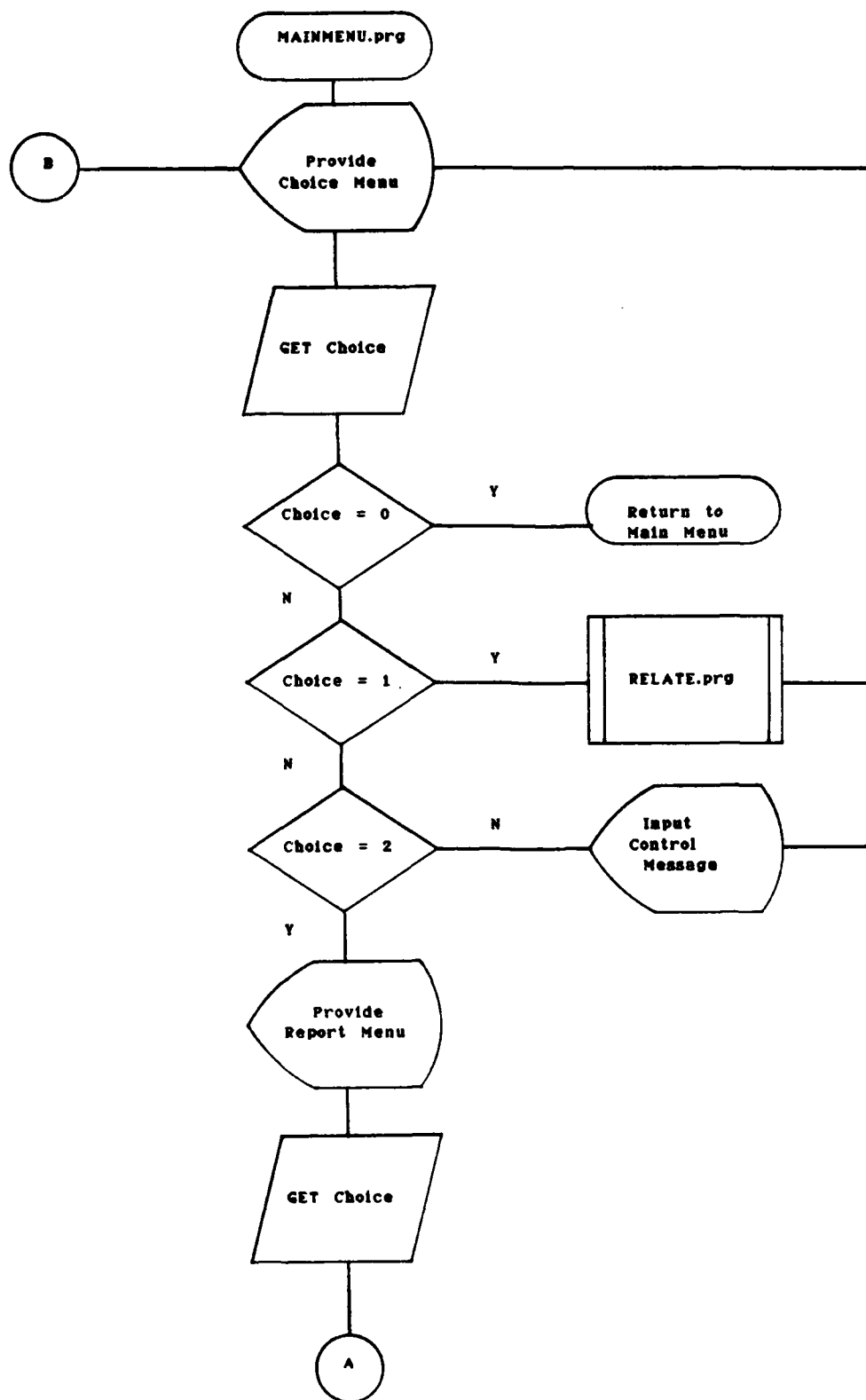


Fig. 76. LISTREPS.prg Flow Chart

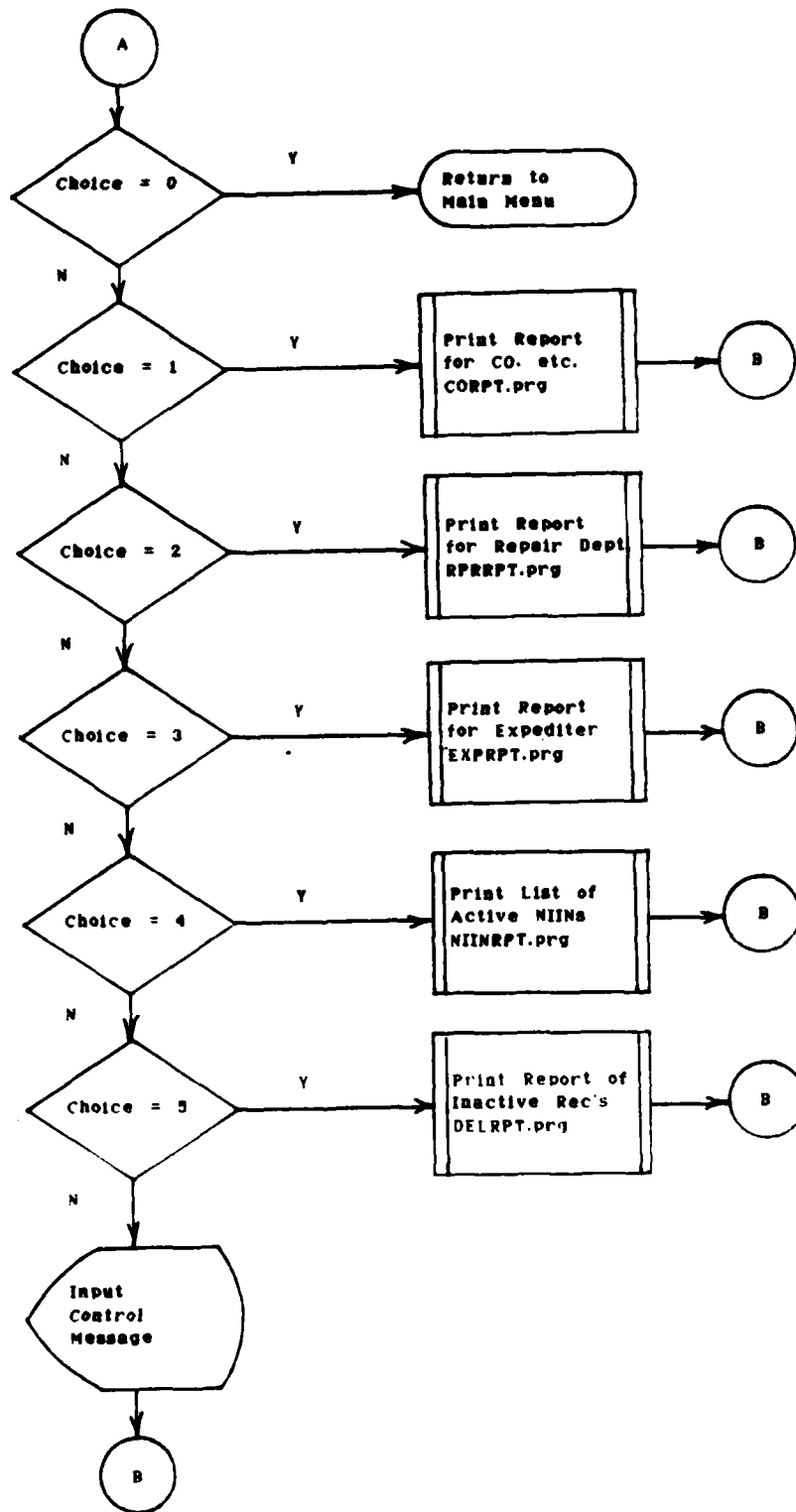


Fig. 76. Continued

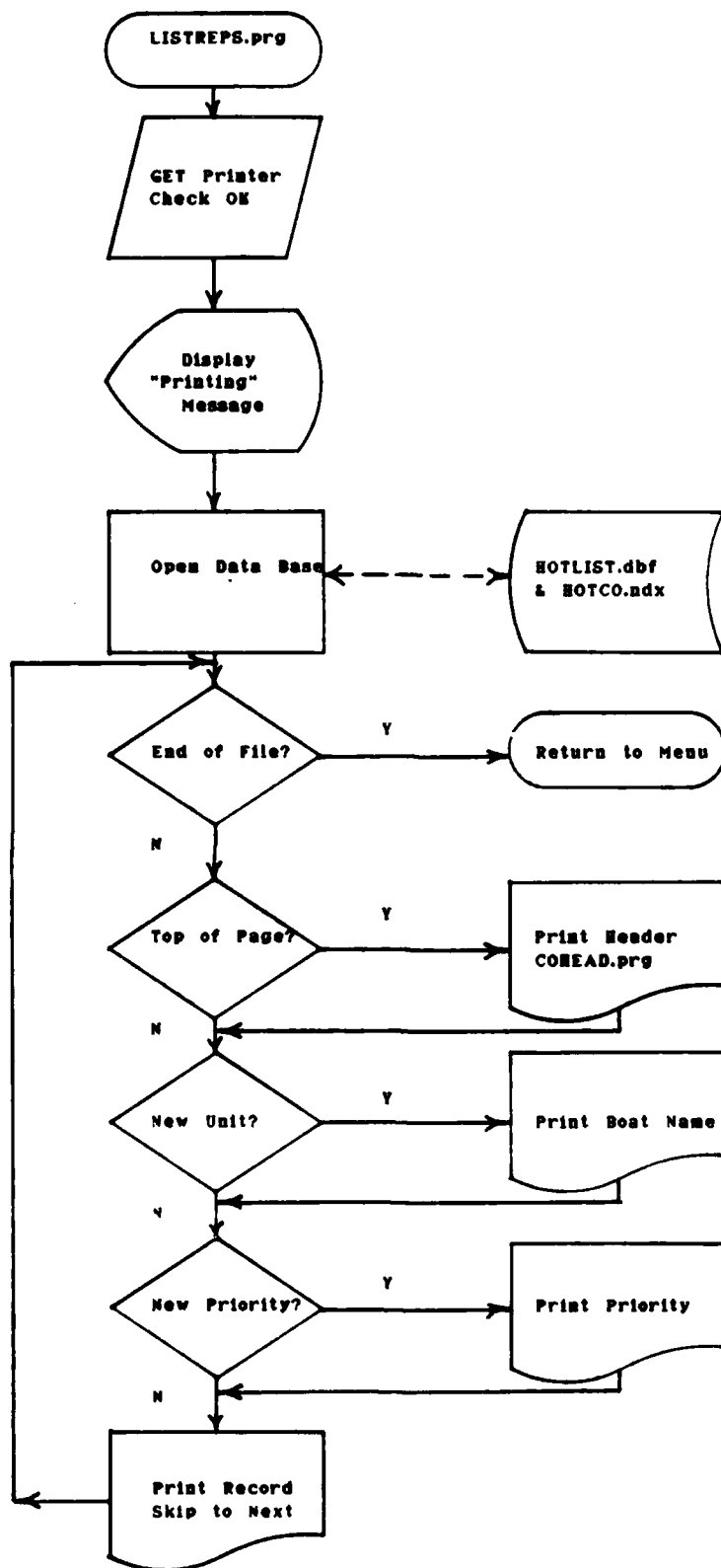


Fig. 77. CORPT.prg Flow Chart

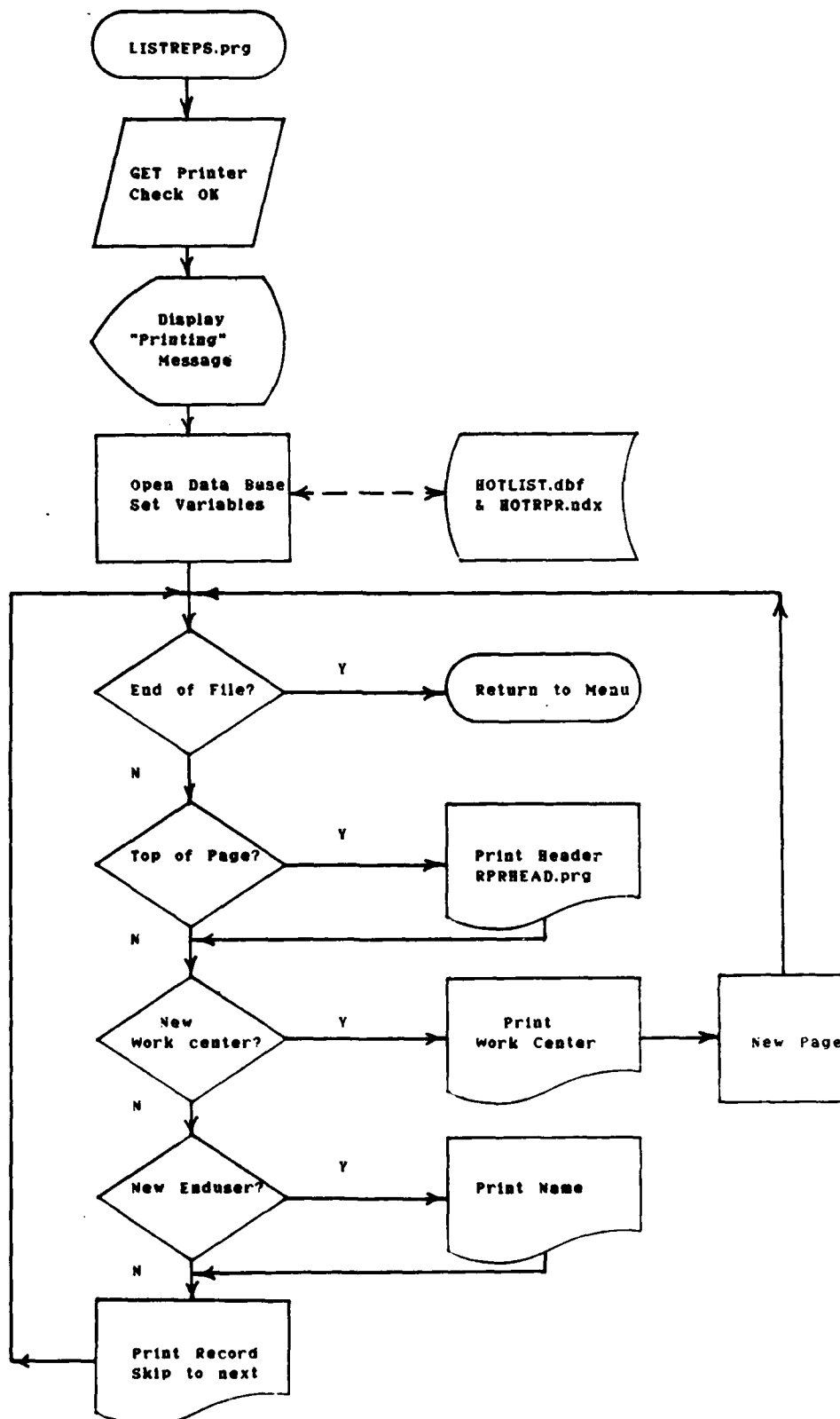


Fig. 78. RPRRPT.prg Flow Chart

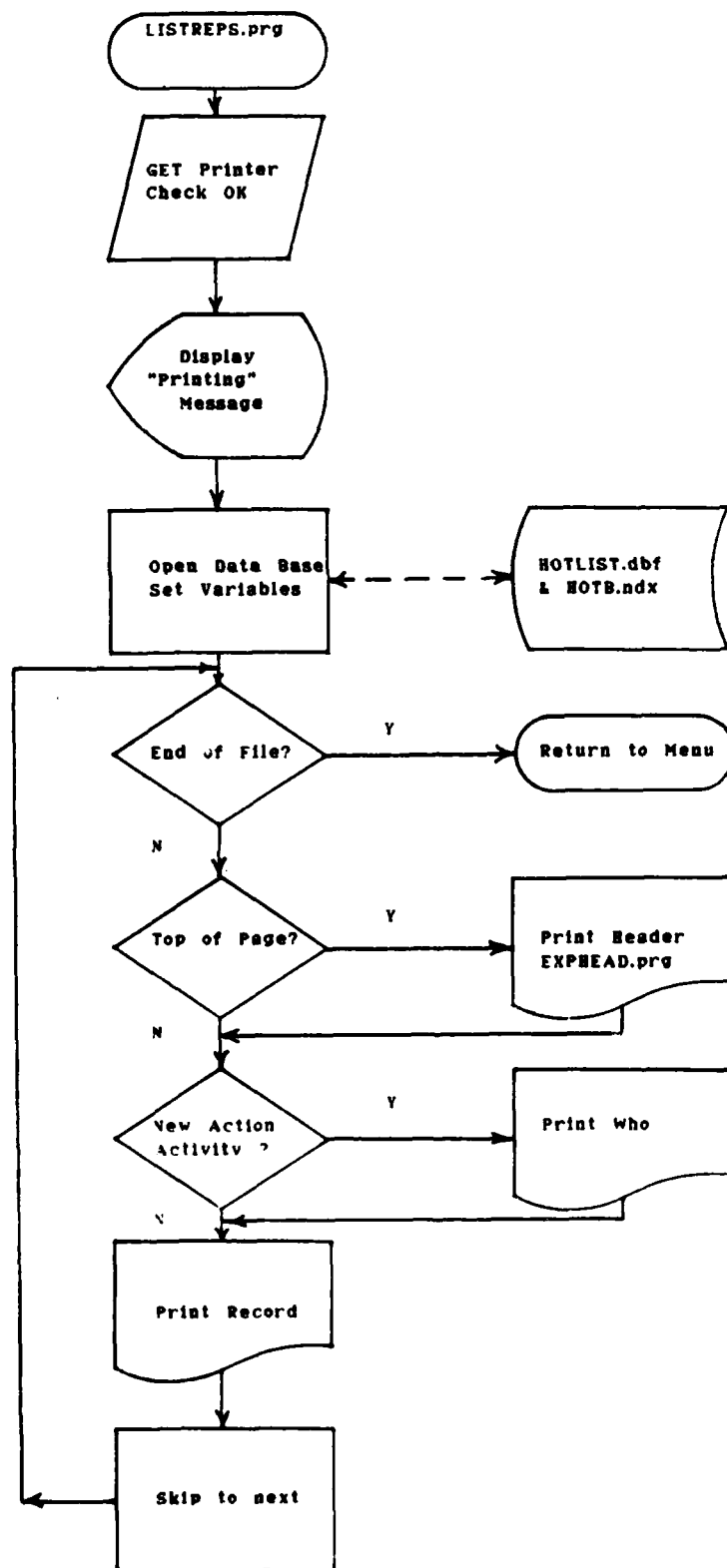


Fig. 79. EXPRT.prg Flow Chart

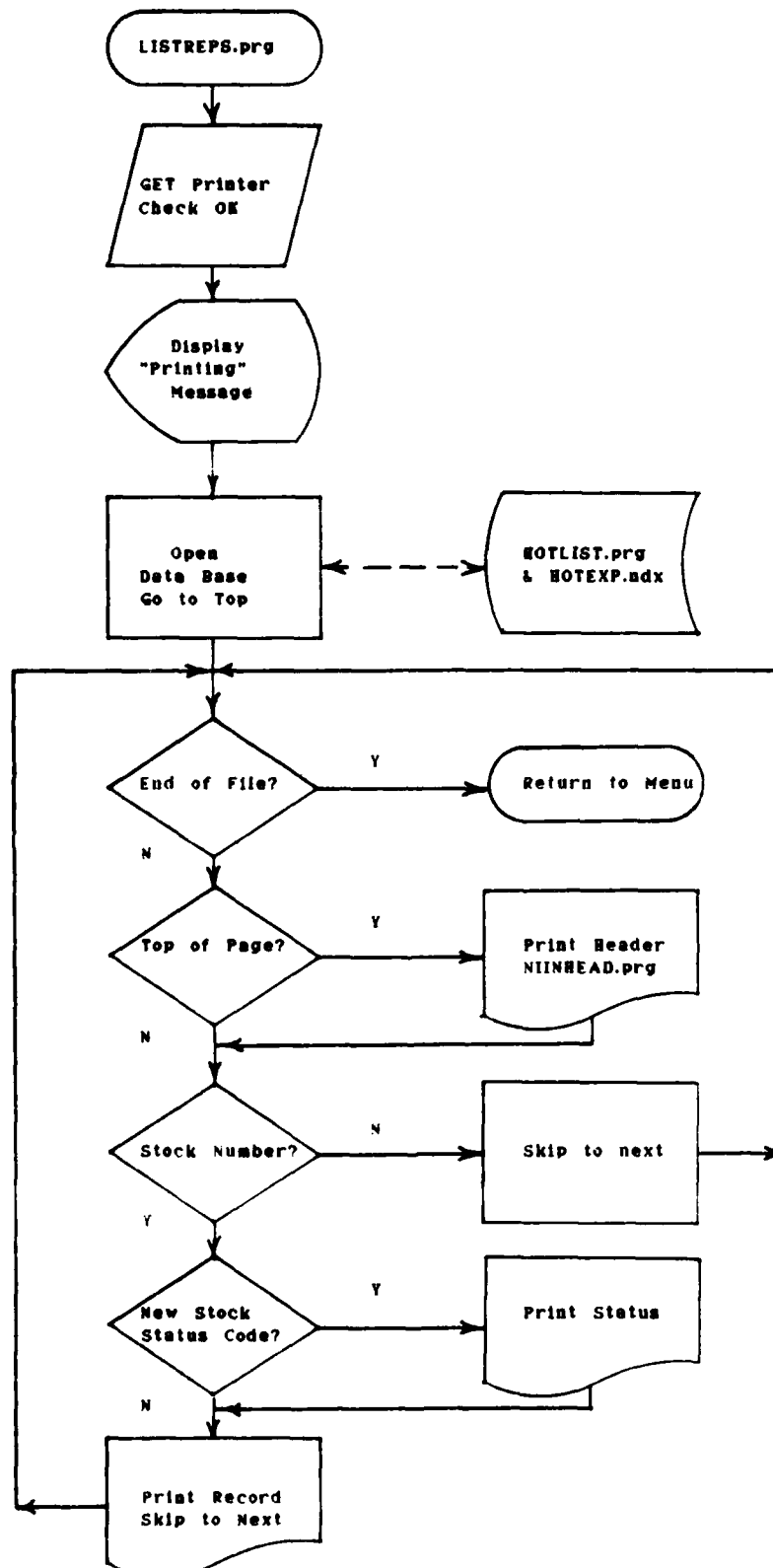


Fig. 80. NIINRPT.prg Flow Chart

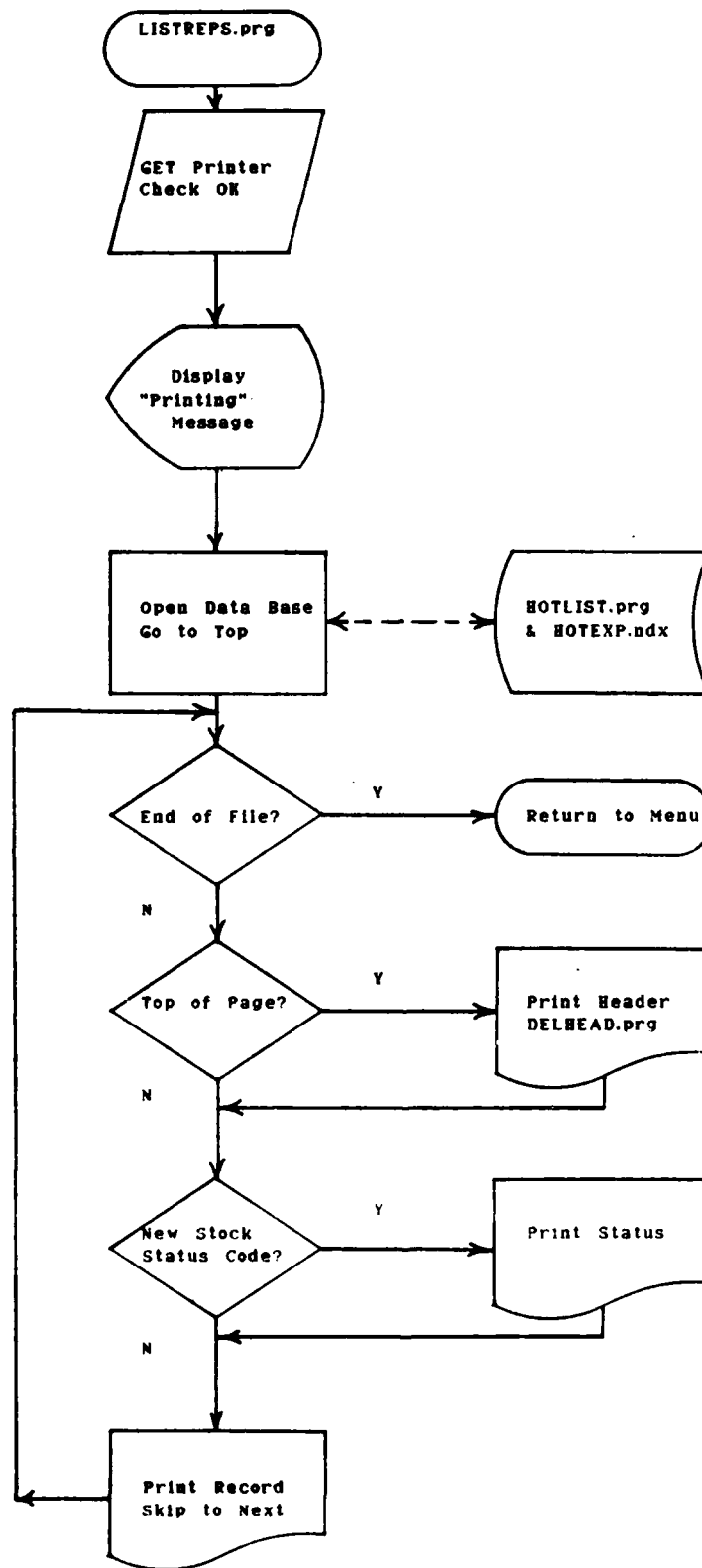


Fig. 81. DELRPT.prg Flow Chart

Supporting Programs

Throughout the HOTLIST Report Program, there are repeated requirements to produce a screen display for the user to obtain information or input data and query responses. In order to reduce program operation time, increase available RAM, and provide a consistent display to make screen comprehension simpler for the user, a subprogram has been included in all screen display sections of the program. Once called up by a program command, this subprogram draws a border screen, and inputs the program title and a screen subtitle. Command then returns to the parent program, where the center section is overlaid with information, and the small bottom section is used for input commands. A sample use of this screen, is shown in Figure 82.

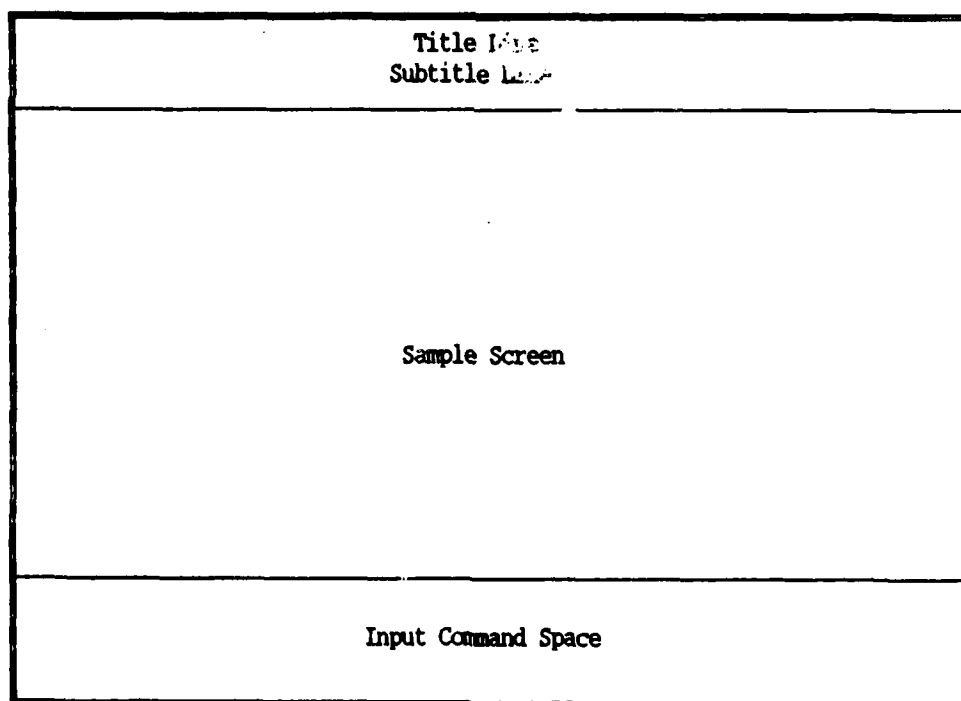


Fig. 82. BORDERS.prg Screen With Sample Overlay

Data input and display screens are also produced using subprograms that are called up from the module program. This includes the data entry screens shown in Figures 15, 20, 25, and 30, and the remove/replace verification screens shown in Figures 39, 40, 49, 51, 53, 55, 57, and 59. Each of these screens are created by displaying the outline drawn by BORDERS.prg, and overlaying the center section with the information appropriate for that screen. As an example, this might include field descriptions combined with data from the record or space for data that goes in that field. Entry and display screen coding follows the appropriate module program coding in Appendix A.

During production of the reports, each new page is started with a descriptive header that titles the page, states the page number and date, and indicates labels for each field of data. These headers are produced by calling up a subprogram from the report module program whenever the page count or other criteria call for a new page. The headers can be seen in report examples in Figures 69 through 73. Coding for these headers follows the appropriate report printing module coding in Appendix A.

Program Utilities and Operating Aides

The capability to automatically install, run, and remove the HOTLIST Report Program is included on the program Master disk. These programs assume that the user has little computer experience or understanding, and operate with few commands. Each of these programs is shown in Appendix A. The desk guide, shown in Appendix E, provides the user with simple instructions for these operations.

Installation. The user is told to install dBASE III PLUS™ to a specific directory, using directions from the dBASE manual. Once this has been done, the installation program, HLINSTAL.bat, adds required commands to the exist-

ing AUTOEXEC.bat and CONFIG.sys files (or builds those files if necessary), and sets aside a copy of the old AUTOEXEC and CONFIG files. Added commands set a path in the drive to enable operation of required master programs from within other directories, and set Buffer and File parameters to allow proper operation of the program. The main HOTLIST Report Program booting program, HOTLIST.bat, is added to the main directory. The installation program then creates a directory, and loads all required programs, data base files, and index files required for operation. to that directory. When all installation procedures have been completed, the user is informed, and told to reboot the computer to set the new parameters.

Operation. This program has been written to run from any directory in the C drive of the computer. After typing "HOTLIST" from the DOS prompt, the user is moved to the appropriate subdirectory, and from there, dBASE III PLUS™ is started, using the MAINMENU.prg program. The user sees the dBASE license screen, and is moved directly to the HOTLIST Introductory Screen (Figure 2). When the user exits the program, through either of the exit paths in the program, the system control is returned to the C drive main directory.

Removal. In the event that the user finds the need to remove the HOTLIST program and all related files from the computer, a utility program is provided. This program basically reverses all steps taken in the installation, including replacing the AUTOEXEC and CONFIG files with the ones in use before the installation was done. Three precautions have been taken to ensure that the user does not run this utility accidentally. This program, as with the installation program, remains on the master program disk, and is not transferred to the hard disk. The master disk is removed from the computer

once installation is complete, so the HLREMOVE.bat program is not easily accessible to the user, and must be deliberately inserted and called up. The second and third precautions are verifications of intent that are written into the program, informing the user of the impact of running the utility, and requiring the user to acknowledge intent before the program will operate.

V. Conclusions and Recommendations

Conclusions

This thesis began by investigating the management and operational report requirements of refit management personnel on-board FBM Tenders, and determining the feasibility of developing a microcomputer-based software program that would support those requirements. Literature research of existing systems revealed specific and recurring requirements, and that a system that would easily produce a variety of reports meeting those requirements was both needed and feasible.

The dBASE III PLUS™ software package by Ashton-Tate was selected as being appropriate for development of this system. The required programs and databases were developed within the criteria identified as pertinent for both management and user needs. Input processes were matched, when possible, to the processes used by the SNAP I inventory management program. Operation of the system is expected to be performed by enlisted personnel ranging in rank from Seaman (E-3) to First Class Petty Officer (E-6). The system was tested by U.S. Naval Officers experienced in the submarine refit and enlisted personnel management fields. The programs were then upgraded to include recommendations from both the Naval Officers and AFIT faculty members knowledgeable in the data base programming arena.

The total system that was developed can be stored on one 5¼" floppy disk with a storage capacity of 360 kilobytes, and can be installed on a microcomputer hard disk by the user with minimum of commands. This dBASE III PLUS™ application software will operate on any PC-compatible microcomputer with 384K RAM, one 5¼" floppy drive, a hard disk, a monitor (either monochrome or color), and an 80-column printer capable of using continuous-form

paper. FBM Tenders under the command of PMOLANT have been provided with hardware of at least this capability, and therefore can implement the software upon proper installation of dBASE III PLUS™ on those computers.

The system that was developed will function properly within the FBM application for any of the submarine tenders currently in service, including the fast-attack tenders. This is to allow installation on a non-FBM, or non-Atlantic Fleet tender, should one of the other tenders be transferred to PMOLANT for FBM support.

This application could be tailored, with few changes, to the needs of fast-attack tenders or Pacific Fleet FBM tenders, or the needs of either Trident Submarine Refit Facility. The general processes used could, in fact, be applied to any systems which support an organization whose mission it is to perform time-limited job-shop types of maintenance for recurring customers.

Recommendations

The literature review surrounding this thesis revealed a significant concern: the U.S. Navy has tremendous unfilled potential in the area of improving productivity and production quality through the use of microcomputers. Equipment has only begun to be installed on many of the ships, and few applications using readily available software packages have been developed to meet this potential. Although this is largely due to the high workloads of shipboard personnel, initial development of the HOTLIST Report Program provides potential for gains in this area with minimal dedication of resources.

Other Applications. The application expansion possibilities discussed in the conclusions section open the door for follow-on systems. Although alterations to program software would be required, potential candidate areas for expansion include, but are not limited to the following:

1. Pacific Fleet FBM Tenders. Specific operation procedures were not examined in this research, but the mission similarities identify this type of operation as a prime candidate for easy system conversion.
2. Fast-Attack Submarine Tenders. The database for these ships would be much larger than that of the FBM Tenders, and time constraints are less critical, but many other operational procedures are so similar that the end reports required are almost identical (18).
3. Navy Shipyards. In this case, time constraints and the job-shop repair functions closely resemble operation on an FBM Tender. Accounting procedures vary from the Tenders, but most of the requirements are close enough to warrant implementation.
4. Destroyer Tenders. Here, operation differs from FBM Tenders even more than with fast-attack submarine tenders, but missions and general procedures are similar enough to modify software for this application.
5. Other Facilities. Maintenance and repair facilities in other areas of the Navy, and in the other branches of the DOD must also track high priority requisitions critical to high-paced schedules. The commonality of requisition numbers, stock numbers, and supply status and action activity codes, provides an appropriate situation to which this program may be adapted with changes only to organization and work center identification codes.

Interface Opportunities. Many other computer applications and systems are being installed on-board these FBM Tenders. Among the new systems, there are two that directly impact on the HOTLIST Report Program, providing opportunities to further reduce resource requirements and increase productivity.

1. PMOLANT HOTLIST. This daily report is currently received in a computer-readable format by each of the FBM Tenders. Development of direct input capabilities of that information into the HOTLIST Report Program data base would reduce input time and errors, and would significantly improve reporting quality.
2. SNAP I. This comprehensive administrative system maintains information both on the required stock item availability on-board the Tender, and on the job work center requirements. There is considerable information in this system that would enhance report quality and ensure the highest level of support. Development of interface capabilities with SNAP I for the purpose of extracting desired information would enhance the HOTLIST Report Program's current capabilities, and provide opportunities for further improvement.

Customer Support. Many customer and user needs have been addressed and supported in the development of this system. There are a few that because of dBASE III PLUS™, programmer, or time limitations, were not included in the programming.

1. Archiving. Although the one tender currently using a similar system does not permanently remove records from the database, a module to move selected records from the main data base to an auxiliary data base would allow the program to run more smoothly, without losing the corporate information contained in those records.
2. Data Analysis. Records of completed requisitions provide an opportunity for various types of analysis not currently available on the Tenders. Such analysis might include identification of stocking problems, either by specific stock numbers, or by group and class

- of NSNs. Graphing of high priority requirements by period or by supported unit may reveal cyclical or administrative problems that can be corrected by management. Trend analysis can identify developing management problems to enable correction before they become critical. These analysis functions may become easier to implement as improvements are made to dBASE and similar software.
- 3. Unit Reporting Selection. Presently, all active requisitions are reported. A module that provided the opportunity to select specific supported units to report would allow the user to limit reports to only those units of interest at any given time.
- 4. Other Upgrades. Further research of user requirements may reveal other opportunities to expand the capabilities of this program to other areas. This would be especially valuable once the users have had some experience with the program, and may have expanded their needs accordingly.

Implementation. The HOTLIST Report Program provides an opportunity to the high-paced, leanly staffed SUBSAT and ROVSS offices to produce a required report with much less manpower, while considerably lowering errors. The resulting product will provide customers with a higher quality report that includes more information than previously available, in more formats. Of even more significance, the program also provides the supply personnel with three reports of information previously unavailable to them, that will allow more efficient management of these critical requirements, and will provide opportunities to raise the level of customer service to new heights.

```

*****
      STARTUP.PR
* Startup Module for MOTLIST Rpt Prgm *
*****

```

110

```

0 7. 8 SAY "exclusive use of the United States Military, and is protected by"
0 8. 8 SAY "U. S. Copyright Law (Title 17 United States Code). Unauthorized"
0 9. 8 SAY "reproduction and / or sales may result in imprisonment of up to"
0 10. 8 SAY "ONE YEAR, and fines of up to $10,000 (17 USC 506). Copyright"
0 11. 8 SAY "infringers may also be subject to civil liability."
0 12.24 SAY "*** DISCLAIMER OF WARRANTY ***"
0 13. 8 SAY "This software and manual is distributed without any express or"
0 14. 8 SAY "implied warranties whatsoever. Because of the diversity of con-"
0 15. 8 SAY "ditions and hardware under which this program may be used, no"
0 16. 8 SAY "warranty of fitness for a particular purpose is offered. The"
0 17. 8 SAY "user is advised to test the program thoroughly before relying on"
0 18. 8 SAY "it. The user must assume the entire risk of using the program."
0 20.27 SAY "Press any key to continue"
0 22.11 SAY "Copyright (c) Claire C. Smith 1987. All Rights Reserved"
0 23.79 SAY ""
WAIT SPACE(40)+""
RETURN

```

```

*****
*                               *
*      MAINMENU.PRG             *
*      HOTLIST MAIN MENU Program *
*                               *
*****

```

```

* ----- introduce program
DO STARTUP
* ----- Begin loop for main menu
DO WHILE .T.
* ----- Draw menu to screen
stitle = "Main Menu"
CHOICE = 0
DO BORDERS WITH title, stitle
0 6.27 SAY "Choose Desired Action"
0 8.17 SAY "[ 1 ] Change or Add To Records in a Data Base"
0 10.17 SAY "[ 2 ] Remove or Reactivate Records in a Data Base"
0 12.17 SAY "[ 3 ] Translate supply codes for reports"
0 14.17 SAY "[ 4 ] Print Reports"
0 16.17 SAY "[ 0 ] Exit the HOTLIST Report Program"
* ----- get user's choice
0 21.24 SAY "Enter Choice (0-4): " GET CHOICE PICT "9" RANGE 0,4
READ
* ----- go to subprogram
DO CASE
CASE CHOICE = 0
EXIT
CASE CHOICE = 1
DO DATACHG
CASE CHOICE = 2
DO DATADEL
CASE CHOICE = 3
DO RELATE
CASE CHOICE = 4
DO LISTREPS
ENDCASE
ENDDO
* ----- Done with program. Clear all commands and return to Dot Prompt.
SET TALK ON
SET STAT ON
SET ESCAPE ON
CLEAR GETS
CLOSE DATABASES
* ----- Done with program. Exit to DOS prompt.
QUIT

```



```

ENDIF
* -- filter file to only those with requested requisition date
SET FILTER TO RQNDATE = MRQNDATE
GOTO TOP
* -- get requisition serial number from user
MSERIAL = SPACE(4)
DO BORDERS WITH title, stitle
@ 8.22 SAY "Enter Requisition Julian Date: " + LTRIM(STR(MRQNDATE))
@ 12.17 SAY "Enter Four-digit Requisition Serial Number: ";
    GET MSERIAL PICTURE "!!!!9"
READ
* -- look for requisition number on file
ok = .T.
new = .F.
SEEK MSERIAL
* -- check whether or not found, or if found, whether deleted
IF EOF() .OR. DELETED()    && if true, will add new record
    IF DELETED()          && record exists but is deleted
        * -- if DELETED warn user & ask whether to continue adding
        mok = .F.
        @ 14.10 SAY "This requisition number has been deleted from ":
            + "current files."
        @ 15.22 SAY "Do you want to use it anyway? (Y or N)"
        @ 17. 7 SAY "WARNING: Data presently in record will be lost unless":
            + " record is"
        @ 18. 8 SAY "Reactivated first, using 'Remove or Replace Records'":
            + " Module."
        @ 21.40 GET mok PICTURE 'Y'
        READ
        IF .not. mok    && if not ok, loop
            LOOP
        ELSE            && if ok, prepare for add
            * -- if user wants to reuse anyway, mark all associated
            * transactions that are deleted, then recall record
            SEEK MSERIAL
            REPLACE DELETEDCODE WITH .T. WHILE MSERIAL=SERIAL
        ENDIF
    ELSE                && otherwise: no record found
        mok = .T.
        * -- verify addition of new account
        @ 14.25 SAY "Requisition Number not found."
        @ 16.16 SAY "Do you want to create a new record? (Y or N)"
        @ 21.40 GET mok PICTURE 'Y'
        READ
        IF .not. mok    && if not verified, loop
            LOOP
        ELSE            && otherwise, create new record
            APPEND BLANK    && create new blank record
            REPLACE SERIAL WITH MSERIAL, RQNDATE WITH MRQNDATE
            DELETE          && mark deleted until verified
        ENDIF
    ENDIF
    * -- in either case (DELETED or EOF) initialize variables to blank
    STORE SPACE(68) TO MSTATUS, MRMK
    STORE SPACE(15) TO MNOMEN, MEQUIP
    STORE SPACE(11) TO MNIIN
    STORE SPACE(5) TO MEND, MUIC
    STORE SPACE(4) TO MSTCTRL, MWKCTR, MJSN, MTSN
    STORE SPACE(3) TO MACTION
    STORE SPACE(2) TO MUI, MSTATCD
    STORE SPACE(1) TO MPRI
    STORE 0 TO MQTY
    STORE .T. TO MDELCD
    new = .T.
ELSE
    && update existing record
    * -- initialize variables to values in file
    MUIC = UIC
    MRQNDATE = RQNDATE
    MSERIAL = SERIAL
    MPRI = PRIORITY

```

```

MNOMEN = NOMEN
MNIIN = NIIN
MQTY = QTY
MUI = UI
MEND = ENDUSER
MSTKCTRL = STOCKCTRL
MSTATUS = STATUSNAME
MSTATCD = STATUSCODE
MACTION = ACTIONACTY
MEQUIP = EQUIPMENT
MWNCTR = WORKCENTER
MJSN = JSN
MRMK = REMARKS
MTSN = TSN
MDELCD = DELETECODE
ENDIF
*-- Edit the record until ok
mok = .F.
DO WHILE .not. mok
  * -- get data from user
  DO ROTIN
  @ 21.8 SAY "Press <ENTER> after entry if cursor does not move to ":"
    + "next field."
  @ 22.26 SAY "Press <ESC> to finish edit."
  READ
  @ 21.2 CLEAR TO 22.77
  * -- check for escape code. Break out of loop if so.
  @ 21.18 SAY "Is input OK? ( Y or N ) ( <ESC> to QUIT ) ":"
    GET mok PICTURE 'Y'
  READ
  IF READKEY()=12
    EXIT
  ENDIF
ENDIF
ENDDO
IF mok
  && make change if input is OK
  REPLACE UIC WITH MUIC, RQDATE WITH MRQDATE, SERIAL WITH MSERIAL.;
  PRIORITY WITH MPRI, NOMEN WITH MNOMEN, NIIN WITH MNIIN, QTY WITH:
  MQTY, UI WITH MUI, ENDUSER WITH MEND, STOCKCTRL WITH MSTKCTRL
  REPLACE STATUSNAME WITH MSTATUS, STATUSCODE WITH MSTATCD,
  ACTIONACTY WITH MACTION, EQUIPMENT WITH MEQUIP, WORKCENTER WITH:
  MWNCTR, JSN WITH MJSN, REMARKS WITH MRMK, TSN WITH MTSN.;
  DELETECODE WITH .F.
  RECALL
  && undelete record
ENDIF mok
ENDDO .T.
&& end of main loop
REINDEX
CLEAR
SET FILTER TO
CLEAR GETS
CLOSE DATABASES
RETURN

```

```

*****
*                               HOTIN.PRG                               *
*   HOTLIST Data Add/Edit Screen   *
*****

```

```

stitle = "Add or Update Requisition Information"
DO BORDERS WITH title, stitle
@ 5. 27 SAY "Requisition Information"
@ 7.  6 SAY "UIC:"
@ 7. 11 GET MUIC PICTURE "99999"
@ 7. 19 SAY "JULIAN DATE: " + LTRIM(STR(MRQDATE))
@ 7. 39 SAY "SERIAL #: " + MSERIAL
@ 7. 57 SAY "NIIN:"
@ 7. 63 GET MNIIN PICTURE "!!-!99-9999"
@ 8.  6 SAY "PRIORITY (Use X for spec. exp.):"
@ 8. 40 GET MPRI PICTURE "!"
@ 8. 45 SAY "NOMENCLATURE:"
@ 8. 59 GET MNOMEN PICTURE "@!"

```

```

0 9. 6 SAY "QTY:"
0 9. 11 GET MOTY PICTURE "99999"
0 9. 18 SAY "U/I:"
0 9. 23 GET MUI PICTURE "!!"
0 9. 27 SAY "ENDUSER:"
0 9. 36 GET MEND PICTURE "@!"
0 9. 44 SAY "NIS/PNIS/NC/NS:"
0 9. 60 GET MSTKCTRL PICTURE "!!!!"
0 9. 65 SAY "TSN:"
0 9. 70 GET MTSN PICTURE "!!!!"
0 10. 2 TO 10. 77
0 11. 31 SAY "Job Information"
0 13. 6 SAY "JOB NAME:"
0 13. 16 GET MEQUIP PICTURE "@!"
0 13. 39 SAY "WORK CENTER:"
0 13. 52 GET MWKCTR PICTURE "!!!!"
0 13. 65 SAY "JSN:"
0 13. 70 GET MJSN PICTURE "!!!!"
0 14. 2 TO 14. 77
0 15. 29 SAY "Status Information"
0 17. 13 SAY "STATUS CODE:"
0 17. 26 GET MSTATCD PICTURE "!!"
0 17. 45 SAY "ACTION ACTIVITY:"
0 17. 62 GET MACTION PICTURE "!!!!"
0 18. 6 SAY "REMARKS (Contract Number, ESD, EDD, etc.):"
0 19. 2 SAY " "
0 19. 6 GET MRMK
0 19. 73 SAY " "
0 20. 2 TO 20. 77
RETURN

```

```

*****
*                               *
*           STATCHG.PRG         *
*   Change or Add To STATUS CODES   *
*****

```

```

* -- set up environment
* -- open files
CLOSE DATABASES
USE STATUS INDEX STATUSC
title = "HOTLIST Report Program"
* -- main loop
DO WHILE .T.
  CLEA
  * -- get status code from user
  STORE SPACE(2) TO MSTATCD
  stitle = "Add To or Change STATUS CODES"
  DO BORDERS WITH title, stitle
  @ 8.30 SAY "Enter Status Code: ":
  GET MSTATCD PICTURE "!!"
  @ 14.21 SAY "To return to menu, just press <RETURN>"
  READ L&SAVE
  * -- exit on blank input
  IF MSTATCD = SPACE(2)
    EXIT
  ENDIF
  * -- look for status code on file
  ok = .T.
  new = .F.
  SEEK MSTATCD
  * -- check whether or not found, or if found, whether deleted
  IF EOF() .OR. DELETED()  && if true, will add new record
    IF DELETED()          && record exists but is deleted
      * -- if DELETED warn user & ask whether to continue adding
      mok = .F.
      @ 14.14 SAY "This status code has been deleted from current files."
      @ 15.21 SAY "Do you want to use it anyway? (Y or N)"
      @ 17. 7 SAY "WARNING: Data presently in record will be lost unless ":
        + "record is"
      @ 18. 8 SAY "'Undeleted first using 'Delete or Undelete Records'":

```

```

      + " Module."
@ 21.40 GET mok PICTURE 'Y'
READ
IF .not. mok  && if not ok, loop
  LOOP
ELSE
  && if ok, prepare for add
  * -- if user wants to reuse anyway, mark all associated
  * transactions that are deleted, then recall record
  SEEK MSTATCD
  REPLACE SDELCD WITH .T. WHILE MSTATCD=STATUSCODE
ENDIF
ELSE
  && otherwise: no record found
  mok = .T.
  * -- verify addition of new account
  @ 14.21 SAY "          Status code not found.
  @ 16.18 SAY "Do you want to create a new record? (Y or N)"
  @ 21.40 GET mok PICTURE 'Y'
  READ
  IF .not. mok  && if not verified, loop
    LOOP
  ELSE
    && otherwise, create new record
    APPEND BLANK  && create new blank record
    REPLACE STATUSCODE WITH MSTATCD
    DELETE      && mark deleted until verified
  ENDIF
ENDIF
* -- in either case (DELETED or EOF) initialize variables to blank
STORE SPACE(68) TO MSTATUS
STORE SPACE(4) TO MUSER
STORE .T. TO MSDELCD
new = .T.
ELSE
  && update existing record
  * -- initialize variables to values in file
  MSTATUS = STATUSNAME
  MUSER = USER
  MSDELCD = SDELCD
ENDIF
*-- Edit the record until ok
mok = .F.
DO WHILE .not. mok
  * -- get data from user
  DO STATIN
  @ 21.8 SAY "Press <ENTER> after entry if cursor does not move to ":
    + "next field."
  @ 22.26 SAY "Press <ESC> to finish edit."
  READ
  @ 21.2 CLEAR TO 22.77
  * -- check for escape code. Break out of loop if so.
  @ 21.18 SAY "Is input OK? ( Y or N ) ( <ESC> to QUIT ) ":
    GET mok PICTURE 'Y'
  READ
  IF READKEY()=12
    EXIT
  ENDIF
ENDDO
IF mok
  && make change if input is OK
  REPLACE STATUSNAME WITH MSTATUS, USER WITH MUSER, SDELCD WITH .F.
  RECALL
  && undelete record
ENDIF mok
ENDDO .T.
&& end of main loop
REINDEX
CLEAR
SET FILTER TO
CLEAR GETS
CLOSE DATABASES
RETURN

```



```

@ 21.40 GET mok PICTURE 'Y'
READ
IF .not. mok  && if not verified. loop
  LOOP
ELSE  && otherwise. create new record
  APPEND BLANK  && create new blank record
  REPLACE ACTIONACTY WITH MACTYNAME
  DELETE  && mark deleted until verified
ENDIF
ENDIF
* -- in either case (DELETED or EOF) initialize variables to blank
STORE SPACE(20) TO MACTYNAME
STORE .T. TO MADELCD
new = .T.
ELSE  && update existing record
  * -- initialize variables to values in file
  MACTYNAME = ACTYNAME
  MADELCD = ADELCD
ENDIF
*-- Edit the record until ok
mok = .F.
DO WHILE .not. mok
  * -- get data from user
  DO ACTYIN
  @ 21.8 SAY "Press <ENTER> after entry if cursor does not move to ":
    + "next field."
  @ 22.26 SAY "Press <ESC> to finish edit."
  READ
  @ 21.2 CLEAR TO 22.77
  * -- check for escape code. Break out of loop if so.
  @ 21.18 SAY "Is input OK? ( Y or N ) ( <ESC> to QUIT ) ":
    GET mok PICTURE 'Y'
  READ
  IF READKEY()=12
    EXIT
  ENDIF
ENDDO
IF mok  && make change if input is OK
  REPLACE ACTYNAME WITH MACTYNAME, ADELCD WITH .F.
  RECALL  && undelete record
ENDIF mok
ENDDO .T.  && end of main loop
REINDEX
CLEAR
SET FILTER TO
CLEAR GETS
CLOSE DATABASES
RETURN

```

```

*****
* ACTYIN.PRG *
*ACTION ACTIVITY CODES Add/Edit Screen*
*****

title = "HOTLIST Report Program"
stitle = "Add or Update Action Activity Codes"
DO BORDERS WITH title, stitle
@ 10. 28 SAY "Action Activity Code: " + ACTIONACTY
@ 14. 25 SAY "Name of Action Activity: " GET MACTYNAME
RETURN

*****
* "ICCHG.PRG *
* Add To or Change UIC CODES *
*****

* -- set up environment. open files
CLOSE DATABASES
USE UIC INDEX UICD, UICE
* -- main loop

```

```

DO WHILE .T.
  CLEA
  * -- get uic from user
  STORE SPACE(5) TO MUIC
  stitle = "Add To or Change UICs"
  DO BORDERS WITH title, stitle
  @ 8.30 SAY "Enter UIC: " GET MUIC PICTURE "99999"
  @ 14.20 SAY "To return to menu, just press <RETURN>"
  READ
  * -- exit on blank input
  IF MUIC = SPACE(5)
    EXIT
  ENDIF
  * -- look for status code on file
  ok = .T.
  new = .F.
  SEEK MUIC
  * -- check whether or not found, or if found, whether deleted
  IF EOF() .OR. DELETED()    && if true, will add new record
    IF DELETED()            && record exists but is deleted
      * -- if DELETED warn user & ask whether to continue adding
      mok = .F.
      @ 14.18 SAY "This UIC has been deleted from current files."
      @ 15.22 SAY "Do you want to use it anyway? (Y or N)"
      @ 17.7 SAY "WARNING: Data presently in record will be lost unless ":
        + "record is"
      @ 18.8 SAY "'Undeleted' first using 'Delete or Undelete Records':"
        + " Module."
      @ 21.40 GET mok PICTURE 'Y'
      READ
      IF .not. mok    && if not ok, loop
        LOOP
      ELSE            && if ok, prepare for add
        * -- if user wants to reuse anyway, mark all associated
        * transactions that are deleted, then recall record
        SEEK MUIC
        REPLACE UDELCD WITH .T. WHILE MUIC=UIC
      ENDIF
    ELSE              && otherwise: no record found
      mok = .T.
      * -- verify addition of new account
      @ 14.18 SAY "                UIC not found."
      @ 16.18 SAY "Do you want to create a new record? (Y or N)"
      @ 21.40 GET mok PICTURE 'Y'
      READ
      IF .not. mok    && if not verified, loop
        LOOP
      ELSE            && otherwise, create new record
        APPEND BLANK  && create new blank record
        REPLACE UIC WITH MUIC
        DELETE        && mark deleted until verified
      ENDIF
    ENDIF
    * -- in either case (DELETED or EOF) initialize variables to blank
    STORE SPACE(20) TO MSHIPNAME
    STORE SPACE(4) TO MSHIPTYPE
    STORE 0 TO MNULL
    STORE .T. TO MUDELCD
    new = .T.
  ELSE                && update existing record
    * -- initialize variables to values in file
    MSHIPNAME = SSHIPNAME
    MSHIPTYPE = SHIPTYPE
    MNULL = NULLNUMBER
    MUDELCD = UDELCD
  ENDIF
  *-- Edit the record until ok
  mok = .F.
  DO WHILE .not. mok
    * -- get data from user

```



```

*****
*                                HOTDEL.PRQ                                *
*  * Delete/Undelete Record from HOTLIST *                               *
*****

```

129

```

      @ 22.30 SAY "Are you SURE? (Y or N)" GET ok PICTURE "Y"
      READ
      @ 21.2 CLEAR TO 22.77
      IF ok
        DELETE
        ok = " "
        @ 21.12 SAY "Record has been removed. Press any key to ":
          + "continue" GET ok
        READ
      ENDIF ok
    ENDIF mok
  ENDIF DELETED()
ENDDO
CLEAR
CLOSE DATABASES
RETURN

```

```

*****
*               HOTSHOW.PRG               *
*   HOTLIST Delete/Undelete Screen   *
*****

stitle = "Remove or Reactivate HOTLIST Records"
DO BORDERS WITH title, stitle
@ 5. 27 SAY "Requisition Information"
@ 7. 6  SAY "UIC: " + UIC
@ 7. 19 SAY "JULIAN DATE: " + LTRIM(STR(MRQDATE))
@ 7. 39 SAY "SERIAL #: " + MSERIAL
@ 7. 57 SAY "NIIN: " + NIIN
@ 8. 6  SAY "PRIORITY (Use X for spec. exp.): " + PRIORITY
@ 8. 45 SAY "NOMENCLATURE: " + NOMEN
@ 9. 6  SAY "QTY: " + LTRIM(STR(QTY))
@ 9. 18 SAY "U/I: " + UI
@ 9. 27 SAY "ENDUSER: " + ENDUSER
@ 9. 44 SAY "NIS/PNIS/NC/NS: " + STOCKCNTRL
@ 9. 65 SAY "TSN: " + TSN
@ 10. 2  TO 10. 77
@ 11. 31 SAY "Job Information"
@ 13. 6  SAY "JOB NAME: " + EQUIPMENT
@ 13. 39 SAY "WORK CENTER: " + WORKCENTER
@ 13. 65 SAY "JSN: " + JSN
@ 14. 2  TO 14. 77
@ 15. 29 SAY "Status Information"
@ 17. 13 SAY "STATUS CODE: " + STATUSCODE
@ 17. 45 SAY "ACTION ACTIVITY: " + ACTIONACTY
@ 18. 6  SAY "REMARKS (Contract Number, ESD, EDD, etc.):"
@ 19. 2  SAY " "
@ 19. 6  SAY REMARKS
@ 19. 73 SAY " "
@ 20. 2  TO 20. 77
RETURN

```

```

*****
*               STATDEL.PRG               *
*   Delete/Undelete STATUS CODES   *
*****

* -- open file
CLOSE DATABASES
USE STATUS INDEX STATUSC
GOTO TOP
stitle="Remove or Reactivate STATUS CODE Records"
* -- main loop
DO WHILE .T.
  * -- get status code from user
  STORE SPACE(2) TO MSTATUS
  DO BORDERS WITH title, stitle
  @ 6.10 SAY "Enter Status Code:" GET MSTATUS PICTURE "!!"
  @ 10.10 SAY "To Return to Menu, just press <RETURN>"
  READ

```



```

*****
*                                ACTYDEL.PRG                                *
*Delete/Undelete ACTION ACTIVITY CODES*
*****

* -- open file
CLOSE DATABASES
USE ACTIVITY INDEX ACTYB
GOTO TOP
stitle="Remove or Reactivate ACTION ACTIVITY CODE Records"
* -- main loop
DO WHILE .T.
    * -- get status code from user
    STORE SPACE(3) TO MACTION
    DO BORDERS WITH title, stitle
    @ 6.10 SAY "Enter Action Activity Code:" GET MACTION PICTURE "!!!"
    @ 10.10 SAY "To Return to Menu, just press <RETURN>"
    READ
    * -- exit on blank input
    IF MACTION = SPACE(3)
        EXIT
    ENDIF
    * -- look for status code on file. if not on file. loop back to start
    SEEK MACTION
    IF EOF()
        && not on file
        mok = " "
        @ 14.10 SAY "That action activity code is not on the file"
        @ 21.27 SAY "Press any key to continue" GET mok
        READ
        LOOP
    ENDIF
    * -- display record
    DO ACTYSHOW
    * -- display deleted/undeleted status
    IF DELETED()
        && if record is deleted. ask if wanted to recall
        ok = .T.
        @ 21.12 SAY "CODE IS CURRENTLY INACTIVE. WANT TO REACTIVATE?":
        + " (Y or N)" GET ok PICTURE "Y"
        READ
        IF ok
            RECALL
            mok = " "
            @ 21.2 CLEAR TO 22.77
            @ 21.13 SAY "Code has been reactivated. Press any key to ":
            + "continue" GET mok
            READ
        ENDIF ok
        @ 21.2 CLEAR TO 22.77
    ELSE
        && not deleted: ask if want to delete. then verify
        mok = .F.
        @ 21.13 SAY "CODE IS CURRENTLY ACTIVE. WANT TO REMOVE? (Y or N)":
        GET mok PICTURE "Y"
        READ
        IF mok
            ok = .F.
            @ 22.30 SAY "Are you SURE? (Y or N)" GET ok PICTURE "Y"
            READ
            @ 21.2 CLEAR TO 22.77
            IF ok
                DELETE
                ok = " "
                @ 21.13 SAY "Code has been removed. Press any key to ":
                + "continue" GET ok
                READ
            ENDIF ok
        ENDIF mok
    ENDIF DELETED()
ENDDO
CLEAR
CLOSE DATABASES
RETURN

```

```

*****
*               ACTYSHOW.PRG               *
*  * ACTION ACTIVITY CODE Display Screen *  *
*****

title = "HOTLIST Report Program"
stitle = "Remove or Reactivate Action Activity Code Records"
DO BORDERS WITH title, stitle
@ 10.25 SAY "Action Activity Code: " + ACTIONACTY
@ 14.25 SAY "Name of Action Activity: " + ACTYNAME
RETURN

```

```

*****
*               UICDEL.PRG               *
*  * Delete/Undelete UICs                *  *
*****

* -- open file
CLOSE DATABASES
USE UIC INDEX UICD, UICE
GOTO TOP
stitle="Remove or Reactivate UIC Records"
* -- main loop
DO WHILE .T.
  * -- get status code from user
  STORE SPACE(5) TO MUIC
  DO BORDERS WITH title, stitle
  @ 8.30 SAY "Enter UIC:" GET MUIC PICTURE "99999"
  @ 14.20 SAY "To Return to Menu, just press <RETURN>"
  READ
  * -- exit on blank input
  IF MUIC = SPACE(5)
    EXIT
  ENDIF
  * -- look for uic on file. if not on file, loop back to start
  SEEK MUIC
  IF EOF()
    && not on file
    mok = " "
    @ 14.10 SAY "That UIC is not on the file"
    @ 21.27 SAY "Press any key to continue" GET mok
    READ
    LOOP
  ENDIF
  * -- display record
  DO UICSHOW
  * -- display deleted/undeleted status
  IF DELETED()
    && if record is deleted, ask if wanted to recall
    ok = .T.
    @ 21.13 SAY "UIC IS CURRENTLY INACTIVE. WANT TO REACTIVATE?":
    + " (Y or N)" GET ok PICTURE "Y"
    READ
    IF ok
      RECALL
      mok = " "
      @ 21.2 CLEAR TO 22.77
      @ 21.13 SAY "UIC has been reactivated. Press any key to ":
      + "continue" GET mok
      READ
    ENDIF ok
    @ 21.2 CLEAR TO 22.77
  ELSE
    && not deleted: ask if want to delete, then verify
    mok = .F.
    @ 21.13 SAY "UIC IS CURRENTLY ACTIVE. WANT TO REMOVE? (Y or N)":
    GET mok PICTURE "Y"
    READ
    IF mok
      ok = .F.
      @ 22.30 SAY "Are you SURE? (Y or N)" GET ok PICTURE "Y"
      READ
      @ 21.2 CLEAR TO 22.77
      IF ok

```

```

DELETE
ok = " "
@ 21.13 SAY "UIC has been removed. Press any key to ":
+ "continue" GET ok
READ
ENDIF ok
ENDIF mok
ENDIF DELETED()
ENDDO
CLEAR
CLOSE DATABASES
RETURN

```

```

*****
*                               *
*                               * UICSHOW.PRG *
*                               * UIC Display Screen *
*                               *
*****

stitle = "Remove or Reactivate UIC Records"
DO BORDERS WITH title, stitle
@ 8.10 SAY "UIC: " + UIC
@ 8.32 SAY "Name of Ship: USS " + SHIPNAME
@ 12.10 SAY "Type of Ship (SSBN, SSN, AS, etc.): " + SHIPTYPE
@ 12.54 SAY "Hull Number: " + LTRIM(STR(HULLNUMBER))
RETURN

```

```

*****
*                               *
*                               * RELATE.PRG *
*                               * *relate HOTLIST.DBF to other databases*
*                               *
*****

CLOSE DATABASES
* ----- clear screen and inform user of purpose of module
stitle = "Translate Supply Codes to Plain English"
QCHOICE = 0
DO BORDERS WITH title, stitle
@ 6.18 SAY "This Choice will translate all supply codes"
@ 8.18 SAY "(such as status and action activity codes)"
@ 10.10 SAY "to plain English for input to management and HOTLIST reports"
@ 12.27 SAY "Choose Desired Action"
@ 14.20 SAY "[ 1 ] Prepare Database for Reports"
@ 16.20 SAY "[ 0 ] Return to Previous Menu"
@ 21.25 SAY "Enter Choice (0 or 1): " GET QCHOICE PICT "9" RANGE 0.1
READ
* ----- if return requested, return to main menu
IF QCHOICE = 0
RETURN
ELSE
DO BORDERS WITH title, stitle
@ 9.9 SAY "*****"
@ 10.9 SAY "*****"
@ 11.10 SAY "*****"
@ 12.10 SAY "*****"
@ 13.11 SAY "*****"
@ 14.11 SAY "*****"
@ 21.32 SAY "Please Stand By"
* ----- identify work areas
SELECT A
USE HOTLIST INDEX HOTB, HOTSEEK, HOTC, HOTE, HOTCO, HOTRPR, HOTEXP
* ----- insert action activity names and priority names
SELECT B
USE ACTIVITY INDEX ACTYB
SELE A
GOTO TOP
DO WHILE .NOT. EOF()
SELE B
SEEK A->ACTIONACTY
REPLACE NEXT 1 A->ACTYNAME WITH B->ACTYNAME
SELE A
IF PRIORITY="1"

```

```

        REPLACE A->PRNAME WITH "One"
    ELSE
        IF PRIORITY="X"
            REPLACE A->PRNAME WITH "Special Expedite"
        ELSE
            IF PRIORITY="4"
                REPLACE A->PRNAME WITH "Four"
            ELSE
                IF PRIORITY="2"
                    REPLACE A->PRNAME WITH "Two"
                ELSE
                    IF PRIORITY="5"
                        REPLACE A->PRNAME WITH "Five"
                    ELSE
                        REPLACE A->PRNAME WITH "(Other)"
                    ENDIF
                ENDIF
            ENDIF
        ENDIF
    ENDIF
ENDIF
ENDIF
IF STOCKCNTRL="NS"
    REPLACE A->WHY WITH "Non-Standard Requisition"
ELSE
    IF STOCKCNTRL="NIS"
        REPLACE A->WHY WITH "Not In Stock"
    ELSE
        IF STOCKCNTRL="NC"
            REPLACE A->WHY WITH "Not Carried"
        ELSE
            IF STOCKCNTRL="PNIS"
                REPLACE A->WHY WITH "Partial Not In Stock"
            ELSE
                REPLACE A->WHY WITH "Unknown Reason"
            ENDIF
        ENDIF
    ENDIF
ENDIF
ENDIF
ENDIF
SKIP
ENDDO
* ----- insert status code descriptions
SELECT C
    USE STATUS INDEX STATUSC
SELE A
    SET INDEX TO NOTC, NOTB, NOTSEEK, NOTE, NOTCO, NOTRPR, NOTEXP
GOTO TOP
DO WHILE .NOT. EOF()
    SELE C
    SEEK A->STATUSCODE
    REPLACE NEXT 1 A->STATUSNAME WITH C->STATUSNAME
    SELE A
    SKIP
ENDDO
CLOSE DATABASES
* ----- insert ship names for own tender
SELECT D
    USE UIC INDEX UICD, UICE
SELE A
    USE NOTLIST INDEX NOTC, NOTB, NOTSEEK, NOTCO, NOTRPR, NOTEXP
GOTO TOP
DO WHILE .NOT. EOF()
    IF ASC(ENDUSER) > 57
        SELE D
        SEEK TENDER      L&A->UIC
        REPLACE NEXT 1 A->SHIPNAME WITH D->SHIPNAME, A->HULLNUMBER WITH :
            D->HULLNUMBER, A->SHIPTYPE WITH D->SHIPTYPE
        SELE A
    ENDIF
    SKIP
ENDDO
* ----- insert ship names for other vessels

```



```

SELECT D
  SET INDEX TO UICE, UICD
SELE A
  SET INDEX TO HOTE, HOTC, HOTB, HOTSEEK, HOTCO, HOTRPR, HOTEXP
GOTO TOP
DO WHILE .NOT. EOF()
  IF ASC(ENDUSER) < 58
    SELE D
    SEEK VAL(A->ENDUSER)
    REPLACE NEXT 1 A->SHIPNAME WITH D->SHIPNAME, A->HULLNUMBER WITH :
      D->HULLNUMBER, A->SHIPTYPE WITH D->SHIPTYPE
    SELE A
  ENDIF
  SKIP
ENDDO
**
ENDIF
CLOSE DATABASES
DO BORDERS WITH title, stitle
@ 10.16 SAY "All translations are completed for all records."
@ 21.21 SAY "Press any key to return to Previous Menu."
@ 23.79 SAY ""
WAIT SPACE(40)+""
RETURN

```

```

*****
*                               *
*      LISTREPS.PRG             *
*  * program to select and print reports *
*****

```

```

DO WHILE .T.
* ----- describe module, remind user to do relate, give chance to exit
PCCHOICE = 1
DO WHILE PCCHOICE = 1
  stitle = "Report Printing Module"
  DO BORDERS WITH title, stitle
  @ 6.8 SAY "This module is designed to automatically print reports that are"
  @ 7.10 SAY "needed for management meetings and requisition expediting."
  @ 9.9 SAY "Before printing reports, you must run the 'Translate' module"
  @ 10.9 SAY "to ensure that all information has been added to the records."
  @ 12.25 SAY "[ 1 ] Translate Supply Codes"
  @ 14.25 SAY "[ 2 ] Print Reports"
  @ 16.25 SAY "[ 0 ] Exit to Main Menu"
  @ 21.25 SAY "Enter choice (0-2): " GET PCCHOICE PICT "9" RANGE 0.2
  READ
  IF PCCHOICE = 0
    EXIT
  ELSE
    IF PCCHOICE = 1
      DO RELATE
    ENDIF
  ENDIF
ENDDO
IF PCCHOICE = 0
  RETURN
ENDIF
* ----- clear screen & ask for user's selection
stitle = "Print Reports"
RPTCHOICE = 0
DO BORDERS WITH title, stitle
* ----- draw menu to screen
@ 6.25 SAY "Select the report you want to print"
@ 8.12 SAY "[ 1 ] CO / COMO / UNITS"
@ 8.38 SAY "(top-level information)"
@ 10.12 SAY "[ 2 ] Repair Department"
@ 10.38 SAY "(sorted by work center)"
@ 12.12 SAY "[ 3 ] Expediter"
@ 12.38 SAY "(sorted by action activity)"
@ 14.12 SAY "[ 4 ] Stock Check"
@ 14.38 SAY "(sorted by stock status. NIIN)"

```

```

@ 16.12 SAY "[ 5 ] Inactive Records"
@ 16.38 SAY "(sorted by stock status. NIIN)"
@ 18.12 SAY "[ 0 ] Return to Main Menu"
* ----- ask for choice
@ 21.27 SAY "Enter Choice (0-5): " GET RPTCHOICE PICT "9" RANGE 0.5
READ
IF RPTCHOICE = 0
    RETURN
ENDIF
stitle = "Printer Check"
DO BORDERS WITH title, stitle
@ 8.14 SAY "Please check to make sure that your Printer is READY"
@ 12.16 SAY "Please make sure that your printer is turned on,"
@ 14.14 SAY "and continuous-form paper is at the top of the form."
@ 21.27 SAY "Press any key when ready."
@ 23.79 SAY ""
WAIT SPACE(40)+""
* ----- go to appropriate report control screen
DO CASE
    CASE RPTCHOICE = 1
        DO CORPT
    CASE RPTCHOICE = 2
        DO RPRRPT
    CASE RPTCHOICE = 3
        DO EXPRPT
    CASE RPTCHOICE = 4
        DO NIINRPT
    CASE RPTCHOICE = 5
        DO DELRPT
ENDCASE
ENDDO
RETURN

```

```

*****
*                                     *
*          CORPT.PR                  *
*    print reports for CO/COMO/UNITS *
*****

```

```

SET DEVICE TO SCREEN
stitle="Print Reports for CO/COMO/UNITS"
DO BORDERS WITH title, stitle
@ 9. 9 SAY "*****"
@ 10. 9 SAY "*****"
@ 11. 9 SAY "*****"
@ 12. 9 SAY "*****"
@ 13. 9 SAY "*****"
@ 14. 9 SAY "*****"
@ 21.32 SAY "Please Stand By"
SET DELETED ON
USE ROTLIST INDEX NOTCO
* ----- Initialize variables
mdate=date()
pageno=0
pagelen=62
cntr=0
margin=0
svalue=IIF(uic=' ','*',' ')
svalue=IIF(priority=' ','*',' ')
SET DEVICE TO PRINT
* ----- loop to print reports
DO WHILE .NOT. EOF()
    * ----- top of page processing
    IF cntr=0
        DO COHEAD WITH cntr,mdate,pageno
    ENDIF
    * ----- print new boat if neccessary
    IF svalue#uic .or. cntr=11      && If new uic
        cntr=cntr+2
        IF cntr>pagelen-6
            DO COHEAD WITH cntr,mdate,pageno

```



```

@ 10, 9 SAY " * * * * * "
@ 11, 9 SAY " * * * * * "
@ 12, 9 SAY "*****"
@ 13, 9 SAY " * * * * * "
@ 14, 9 SAY " * * * * * "
@ 21.32 SAY "Please Stand By"
SET DELETED ON
USE HOTLIST INDEX HO/RPR
mdate=date()           && initialize variables
pageno=0
pagelen=62
cntr=0
margin=0
svalue=IIF(workcenter=' ','*', ' ')
ssvalue=IIF(enduser=' ','*', ' ')
SET DEVICE TO PRINT
DO WHILE .NOT. EOF()    && loop to print reports
 * ----- top of page processing
 IF cntr=0 .or. svalue#workcenter
  DO RPRHEAD WITH cntr,mdate,pageno
ENDIF
 * ----- print new boat if neccessary
 IF cntr=11
  cntr=cntr+2
  IF cntr>pagelen-6
   DO RPRHEAD WITH cntr,mdate,pageno
  ENDIF
  @ cntr, margin SAY "Work Center: " + WORKCENTER
  cntr=cntr+1
  svalue=workcenter
  ssvalue=IIF(enduser=' ','*', ' ')
ENDIF
 IF ssvalue#enduser    && if new enduser
  cntr=cntr+1
  IF cntr>pagelen-5
   DO RPRHEAD WITH cntr,mdate,pageno
  ENDIF
  IF ASC(ENDUSER) < 68    && if enduser is a boat
   @ cntr, margin SAY "Jobs for USS " + TRIM(SHIPNAME) + " (" ;
   - TRIM(SHIPTYPE) + " " + LTRIM(TRIM(STR(BULLNUMBER))) - ")"
  ELSE
   && if enduser is a Tender division
   @ cntr, margin SAY "Jobs for " + ENDUSER
  ENDIF
  @ cntr+1.0 SAY ""
  cntr=cntr+2
  ssvalue=enduser
ENDIF
 * ----- print next record
 @ cntr, 0 SAY UIC + "-" + LTRIM(STR(RONDATE)) + "-" + SERIAL
 @ cntr, margin+ 32 SAY NOMEN
 @ cntr, margin+ 52 SAY NIIN
 @ cntr, margin+ 67 SAY QTY
 @ cntr, margin+ 76 SAY UI
 @ cntr+1,margin+ 0 SAY ACTYNAME
 @ cntr+1,margin+ 23 SAY "Priority " + PRNAME
 @ cntr+1,margin+ 52 SAY EQUIPMENT
 @ cntr+1,margin+ 69 SAY WORKCENTER+"-"+JSN
 @ cntr+2,margin+ 0 SAY STATUSNAME
 @ cntr+3,margin+ 0 SAY REMARKS
 cntr=cntr+5
SKIP
 IF cntr>pagelen-3    && bottom of page processing
  cntr=0
ENDIF
ENDDO
EJECT
SET DEVICE TO SCREEN
SET DELETED OFF
CLOSE DATABASES
RETURN

```



```

*****
*
*                               EXPHEAD.PRG
*
*   *   Print title & heading for EXPRPT   *
*****

PARAMETERS  cntr,mdate,pageno
pageno=pageno+1
@ 3, margin+ 0 SAY "Page no. " + LTRIM(STR(pageno.5))
@ 3, margin+ 58 SAY mdate
@ 4, margin+ 5 SAY "HOT LIST Outstanding Requisition List (by Action";
+ " Activity)"
@ 6, margin+ 0 SAY "NIIN"
@ 6, margin+ 14 SAY "QTY"
@ 6, margin+ 18 SAY "UI"
@ 6, margin+ 21 SAY "NOMENCLATURE"
@ 6, margin+ 37 SAY "UNIT NO."
@ 6, margin+ 46 SAY "REQUISITION NO."
@ 6, margin+ 62 SAY "TSN"

cntr=8
RETURN

```

141

```

      LOOP
    ENDIF
    IF dvalue#stockcntrl .or. cntr=8
      cntr=cntr+2
      IF cntr>pagelen-4
        DO NIINHEAD WITH cntr.mdate,pageno
      ENDIF
      @ cntr. margin SAY "The following requisitions were: " + WHY
      cntr=cntr+2
      dvalue=stockcntrl
    ENDIF
    * ----- print next record
    @ cntr. margin+ 0 SAY NIIN
    @ cntr. margin+ 0 SAY NIIN
    @ cntr. margin+ 12 SAY QTY
    @ cntr. margin+ 18 SAY UI
    @ cntr. margin+ 21 SAY NOMEN
    @ cntr. margin+ 37 SAY SHIPTYPE + " " + LTRIM(STR(BULLNUMBER))
    @ cntr. margin+ 46 SAY UIC + "-" + LTRIM(STR(RQDATE)) + "-" + SERIAL
    @ cntr. margin+ 62 SAY TSN
    cntr=cntr+2
    SKIP
    * ----- bottom of page processing
    IF cntr>pagelen-3
      cntr=0
    ENDIF
  ENDDO
EJECT
SET DEVICE TO SCREEN
SET DELETED OFF
CLOSE DATABASES
RETURN

```

```

*****
*                               *
*      NIINHEAD.PRG             *
*      * Print title & heading for NIIN List *
*****

```

```

PARAMETERS cntr,mdate,pageno
pageno=pageno+1
@ 3. margin+ 0 SAY "Page no. " + LTRIM(STR(pageno,5))
@ 3. margin+ 58 SAY mdate
@ 4. margin+ 19 SAY "HOT LIST Outstanding NIIN List"
@ 6. margin+ 0 SAY "NIIN"
@ 6. margin+ 14 SAY "QTY"
@ 6. margin+ 18 SAY "UI"
@ 6. margin+ 21 SAY "NOMENCLATURE"
@ 6. margin+ 37 SAY "UNIT NO."
@ 6. margin+ 46 SAY "REQUISITION NO."
@ 6. margin+ 62 SAY "TSN"
cntr=8
RETURN

```

```

*****
*                               *
*      DELRPT.PRG               *
*      * print reports of Deleted Reqs *
*****

```

```

SET DEVICE TO SCREEN
stitle="Print NIIN lists of Inactive Requisitions"
DO BORDERS WITH title, stitle
@ 9, 9 SAY "*****"
@ 10, 9 SAY "*"
@ 11, 9 SAY "*"
@ 12, 9 SAY "*****"
@ 13, 9 SAY "*"
@ 14, 9 SAY "*"
@ 21,32 SAY "Please Stand By"
USE NOTLIST INDEX NOTEXP
* ----- initialize variables

```



```

ECHO          *      * * * Removing HOTLIST Report Program * * *      *
ECHO          *      Please stand by . . .      *
ECHO          *
ECHO          * * * * *
COPY C:\CONFIG.OLD C:\CONFIG.SYS
DEL C:\CONFIG.OLD
COPY C:\AUTOEXEC.OLD C:\AUTOEXEC.BAT
DEL C:\AUTOEXEC.OLD
DEL HOTLIST.BAT
DEL C:\HL\*.PRG
DEL C:\HL\*.DBF
DEL C:\HL\*.NDX
RD C:\HL
CLS
ECHO          * * * * *
ECHO          *
ECHO          *      HOTLIST Report Program has been removed.      *
ECHO          *      Remove disk from drive A and REBOOT System.      *
ECHO          *
ECHO          * * * * *
ECHO ON

```

Appendix B: Glossary of Acronyms

ADP	automated data processing
AFIT	Air Force Institute of Technology
AS	auxiliary-submarine (submarine tender - type ship)
AUTOVON	automated voice network communications system
CAPT	Captain
CDR	Commander
CO	commanding officer
COMSUBLANT	Commander, Submarine Forces, Atlantic
CONUS	continental United States
DBMS	data-base management system
DOS	disk operating system
ENS	Ensign
FBM	fleet ballistic missile (or fleet ballistic missile submarine)
IMMS	integrated maintenance management system
JCN	job control number (work center code + JSN)
JSN	job sequence number
LCDR	Lieutenant Commander
LT	Lieutenant
LTJG	Lieutenant (junior grade)
MIS	management information system
NAVSUP	Naval Supply Systems Command
NAVDAC	Naval Data Automation Command
NC	not carried
NIIN	national item identification number

NIS	not in stock
NS	non-standard (non stock-numbered)
NSN	national stock number
PMA	production management assistant
PMOLANT	Polaris Missile Office, U.S. Atlantic Fleet
PNIS	partial-not in stock
RAM	random access memory
ROVSS	repair of other vessels supply support division
RPPO	repair parts petty officer
SNAP I	shipboard non-tactical ADP program (for large ships)
SNAP II	shipboard non-tactical ADP program (for small ships)
SUBSAT	submarine supply assistance team division
SSBN	fleet ballistic missile submarine
UIC	unit identification code
USN	United States Navy
USS	United States Ship

Appendix C: Definitions of Terms

database	A group of logically related files or data-sets.
deployment	A mission that involves sending a ship or submarine to sea for an extended period of time.
Electronics Technician	Enlisted rating specializing in repair, operation, and maintenance of electronics equipment.
expediter	Storekeeper from SUBSAT or ROVSS who monitors high-priority requisition status and does stock system searches to locate and obtain needed parts more quickly.
file	A collection of related records, sometimes called a data-set.
fleet-wide	Covering or applying to the entire Navy or appropriate portions of the Navy.
floppy disk	A thin, portable mylar disk used to store data and software for use in computer operation.
hard disk	A permanent component of a computer system used to store data and software for use in computer operation.
hotlist	A listing of priority 1 (highest priority) requisitions from a submarine tender or supported unit that shows descriptive data as well as latest status.
Hull Technician	Enlisted rating specializing in repair and construction of major ship components, particularly those constructed with metal sheeting.
management	A method of collecting, organizing, storing, and correlating information for the support of planning, controlling, and operating system functions of an organization.
operator	The person who directly inputs information into the computer, and prints reports from the data base.
rating	Enlisted occupational specialty.
refit	A process of overhauling, supplying, and repairing a submarine on a scheduled, fixed-time basis.
requisition	A request for supplies or repair parts.
ship's supervisor	The person designated onboard a Tender to oversee the refit of a specific submarine.

squadron	A group of ships or submarines operating under a single Commander (Commodore) as a unit.
stock-check	The process of searching stock-on-hand inventories to locate needed items for outstanding requisitions.
Storekeeper	Enlisted rating specializing in the ordering, receipt, maintenance, and issue of supplies.
tended-unit	Ship or submarine supported administratively and operationally by a tender.
tender	A ship designed to support a squadron of ships or submarines by providing all repair, supply, communications and administrative equipment and technology required.

Appendix D: Interview Questions

Interview Questions for Supply Officers

1. Do you use the HOTLIST REPORT provided by PMOLANT?
2. If so, how do you use it?
3. Who uses it besides the Supply Department?
4. Does your Supply Department produce any sort of hotlist other than the one provided by PMOLANT?
5. If so, why?
6. To whom do you provide a hotlist?
7. If you had an efficient method to produce your own hotlists, would you use it? How?
8. Is there anyone for whom you would like to produce a hotlist that you presently cannot, due to lack of equipment, personnel, or any other reason?
9. If you could produce hotlists in formats other than that provided by PMOLANT, what would they look like?
10. If you could produce hotlists in other formats, who would you want to produce them for?

Interview Questions for Repair Officers

1. Does your Supply Department provide you with any sort of supply-parts hotlist for refit priority 1 requisitions?
2. Does it tell you what you want to know?
3. What does it lack that would help you do your job?
4. Is it in a format that meets YOUR needs?
5. Is it produced often enough for your needs? Too often?
6. Is the hotlist broken down to a level that is useful within your work-centers? If not, would you want it to be?
7. What changes would you like to see in it if they were possible?

Interview Questions for Submarine Engineering Officers

1. Does the Supply Department on your tender provide you with any sort of supply-parts hotlist for refit priority 1 requisitions?
2. Does it tell you what you want to know?
3. What does it lack that would help you do your job?
4. Is it in a format that meets YOUR needs?
5. What changes would you like to see in it if they were possible?

HOTLIST Report Program
version 1.1

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System Requirements

Hardware requirements include a PC-compatible microcomputer with 384K RAM, one floppy drive, and a hard disk drive, a monitor, and an 80-column printer capable of using continuous form paper.

Software requirements include dBASE III PLUS™, and MS-DOS 2.1 or higher or PC-DOS 2.0 or higher.

Table of Contents

System Requirements	1
Introduction	3
Installation	3
Program Startup	4
WARNINGS	5
Notes and Conventions	6
Trademarks	6
Variables used in This Program	7
Change or Add To Records in a Data Base	8
Remove or Replace Records in a Data Base	10
Translate Codes to Plain English	11
Print Reports	12

Appendix E: Desk Guide

Introduction

The **HOTLIST Report Program** is an easy-to-use program designed to provide U.S. Navy FBM SUBSAT and ROVSS offices with a simple method by which they may input critical Hot List requisition data and easily generate a variety of reports. These reports are designed to be used by both those involved directly in 'REFIT' management meetings, and those in supply who expedite the requisitions.

Installation

Before beginning to use this program, you must first install **dBASE III PLUS**™ in a directory called **C:\DB3P**, using the instructions that came with the **dBASE** manual. If you have already installed **dBASE III PLUS** on your C drive, either change the name of the directory it is in, or install another copy.

Now put the Master **HOTLIST Report Program** disk into Drive A, and type **ah!instal <RETURN>**. When you receive the message that the installation is done, remove the Master disk from drive A, store it in a safe place, and **REBOOT** the computer. Make sure that the system date is correct before continuing; the date in the system will be used in the reports generated by this program.

NOTE: This procedure should only be used the First time you use this program. After initial installation, use **STARTUP** procedures explained on page 4 to run the program.

To remove ALL of this program from your hard disk, put the Master **HOTLIST Report Program** into drive A, and at the prompt **C>**, and type **ah!remove**. WARNING: This will delete ALL **HOTLIST** data files!

Program Startup

Before attempting to start the **HOTLIST Report Program**, first make sure that it has been installed using instructions on page 3.

Read this book carefully before beginning.

HOTLIST Report Program may be started from any place within the C drive. To start the program, at the prompt **C>** type **hotlist**

You will first see a **dBASE** licensing screen. You may press **<RETURN>**, or just wait for the screen to change to the Main Menu.

The program will then move you to the first screen, where you will be asked for the tender's **UIC**. If you want to enter the program, type in the **UIC** in all numbers. When you have typed in all five digits, you will be moved to the next screen. After reading that screen, press any key to continue.

You will now see the Main Menu. From this menu you can go to any of the four main modules. The modules are explained on the following pages.

When you want to **EXIT** from the program, return to the Main Menu, and press **<0>**. You will then be returned to the main directory in the C drive.

WARNINGS

Data Loss

To avoid loss of data, the following advice must be followed:

- 1) DO NOT disconnect or turn off computer or printer during operation. If you expect a power-outage, log out of the program.
- 2) DO NOT "Change or Add To" a record that shows an inactive status, unless you have checked to make sure that you do not want the information in that record. The best method of operation is to reactivate the record first, then change any data fields you desire.
- 3) DO NOT make ANY changes to files in the \HL directory, except through this program. A change to a data base without exactly the same change to all associated indices will result in loss of data. Changing the program files is a violation of copyright laws, and may result in failure of the overall program, and loss of data.
- 4) DO NOT add any files to the \HL directory. The HLREMOVE.BAT program is not designed to work when files have been added to that directory.

If you experience loss of data through accidental power-outage, the recommended method is to remove those records that were damaged through the "Remove and Reactivate" module, and re-input the data through the "Change or Add To Records" module. When you are informed that the record has been deleted, press <Y> to clear the record, and re-input data.

5

Notes and Conventions

Keys: < >

These brackets indicate a key on the keyboard, such as <Y> for the "Y" key, <CTRL> for the "control" key, or <ESC> for the "escape" key.

<RETURN> The enter key is labeled <RETURN> in this program. It is the same key as <ENTER> or <↵>.

<F1> Function keys are not designed to be used in this program. To prevent lost data, DO NOT use function keys within the HOTLIST Report Program.

commands When you are directed to type specific commands into the computer, those commands will be shown in **bold type**.

Numbers It is important that you do not try to substitute letters for numbers. If the input is to be a number, use number keys such as #0 and #1. For letters, use letter keys such as "O" and "L".

Capitals You do not need to use the "CAPS" key for this program. In most places, letters will automatically capitalize if needed.

Trademarks:

dBASE III®	Ashton-Tate
dBASE III PLUS™	Ashton-Tate
IBM®	International Business Machines Corporation
MS-DOS™	Microsoft Corporation

6

Variables used in This Program

The following input variables are used in the HOTLIST Report Program. Examples shown in ().

HOTLIST data base:

Action Act'y 2-digit code (N35)
End User Recipient (628 for boat, A DIV for TAV)
Job Name From IMMS (#1 Aux Fire Pump)
JSN From IMMS
Julian Date Of requisition
NIIN Program supplies hyphens
NIS/PNIS/NC/NS Reason for non-issue
Nomenclature Of item (pipe, copper)
Priority Of RQN (use X for spcl expedite)
QTY Of items per unit of issue
Remarks Include contract #, EDD, Ship mode, etc. 68 characters allowed.
Serial Of RQN (W/G01, 0023, W019)
Status Code 2-digit from PMOLANT (BV, CJ, BA)
TSN Of RQN transmittal
U/I Of item, 2-digit
UIC Of RQN, may not be end user
Work Center From IMMS

Supply Status Codes data base:

Description From P485 or local description
Leading Svce Usually Navy or All

Action Activity Code data base:

Name of Act'y(NSC Jacksonville)

UIC data base:

Hull Number (628)
Name of Ship (Andrew Jackson)
Type of Ship (SSBN, AS, ARDM)

Change or Add To Records in a Data Base

To enter this module, press <I> from the Main Menu.

You will see a menu of the data bases that are used in this program. Although you may change any of the data bases, you will usually only be concerned with the HOTLIST data base. The only time you will change any of the other data bases will be if you find that a supply code in use is not translating properly in the reports.

HOTLIST

In order to update the HOTLIST, you must first input the document number. The first screen will ask you for the requisition Julian date. Use all numbers.

Next, you will be asked for the serial number. This may be letters or numbers, according to local requirements.

If you are adding a new requisition number, or have put in a non-existent number by accident, you will be given the choice of adding a new record. If you want to do so, press <Y>; if not, press <N>.

If you have put in the number of a requisition that has been removed from the active files list, you will be given a chance to use that number.

WARNING: If you press <Y>, all data in that record will be lost. If you want to reactivate that record, you must reactivate it first. See the pages called "Remove or Replace Records in a Data Base" before using that record number.

Change or Add To Records (cont.)

If you have decided to add a new record, or if your record was found in the data base, you will now see the data input screen.

To input data, just fill in the fields as you come to them. In most cases, when you fill up the data field, you will be automatically moved to the next field. If you do not use all the space in the field, you must press **<RETURN>** to move to the next field. If you want to leave the field blank, or if you do not wish to change the information in that field, just press **<RETURN>**. If you have changed all fields you want before reaching the end of the screen, you may press **<ESC>** to end editing of that record. **WARNING:** You must finish changing a field by pressing **<RETURN>**, or by moving to the next field, before pressing **<ESC>**.

155

When you have finished the last field, or if you press **<ESC>** before reaching the end of the screen, you will be asked, "Is input OK?" If it is, just press **<Y>**. If you want to change anything, press **<N>** and the cursor will return to the first field. If you do not wish to keep any of the changes or inputs you have made, press **<ESC>**.

To EXIT from the HOTLIST module, just press **<RETURN>** when you are in the Julian date screen.

Other Data Bases

Changes and additions to other data bases use the same methods used to update the HOTLIST. Just pick the data base from the menu, and follow the directions on the screens.

9

Remove or Replace Records in a Data Base

To enter this module, press **<2>** from the Main Menu.

This module will move any record of any data base between an "active" and an "inactive" status. Only records which are "active" may be used to print reports or translate data codes to plain English.

The most common use of this module is to remove records of filled requisitions from HOTLIST, RPPO, and Expediter's reports, while retaining the record for future use. A list of these inactive records may be printed using the "Print" module. This list may then be used to help determine those items causing frequent problems.

Operation of this module is very much like that of the "Change or Add To Records" module. To retrieve a record, input the requisition Julian date and serial, or the supply code, as appropriate. If the record does not exist, you will be told. If the record does exist, a copy of the record will be displayed, you will be told the status, and given the opportunity to change the status.

If you make a mistake, and change to the wrong status, just re-enter the code and change it back. You cannot lose records while operating this module.

When you have finished using this module, press **<RETURN>** from the Julian date or code input screen to return to the Main Menu.

10

Translate Codes to Plain English

To enter this module, press <3> from the Main Menu, or <1> from the Report Printing Module Menu.

This module will translate all priority, action activity, supply status, and UIC codes into plain English for the reports. Following any data updates, this module must be run before printing any reports. Because of the length of time involved in running the module, it will only run on command (not automatically).

The next screen will tell you what the module is about to do, and will ask whether to continue. If you press <0>, you will return to the menu you came from. If you press <1>, the module will begin to run.

When the module has finished, you will see a screen that says, "All translations are completed for all records." At this point, press any key to return to the menu you came from. All current records will be updated with plain English translations of all codes.

Print Reports

To enter this module, press <4> from the Main Menu.

This module will print five types of reports: the HOTLIST report, grouped by tended unit and priority, an RPPO/Repair Work Center report, which prints each work center's requisitions on separate pages, grouped by tended unit, an Expediter's report, of all requisitions by action activity, a Stock-Check list of all active stock-numbered requisitions in NIIN order, and a list of inactive requisitions.

Before printing any reports, make sure you have run the "Translate" module since the last update (see page 11).

After selecting the report you wish to print, you will be instructed to check your printer. It is very important that you make sure the printer is connected properly, turned on, and continuous paper is loaded with the top of the page lined up with the level of the ribbon. Failure to do this may cause the program to abort or interrupt.

You may print several reports without running the "translate" module in between.

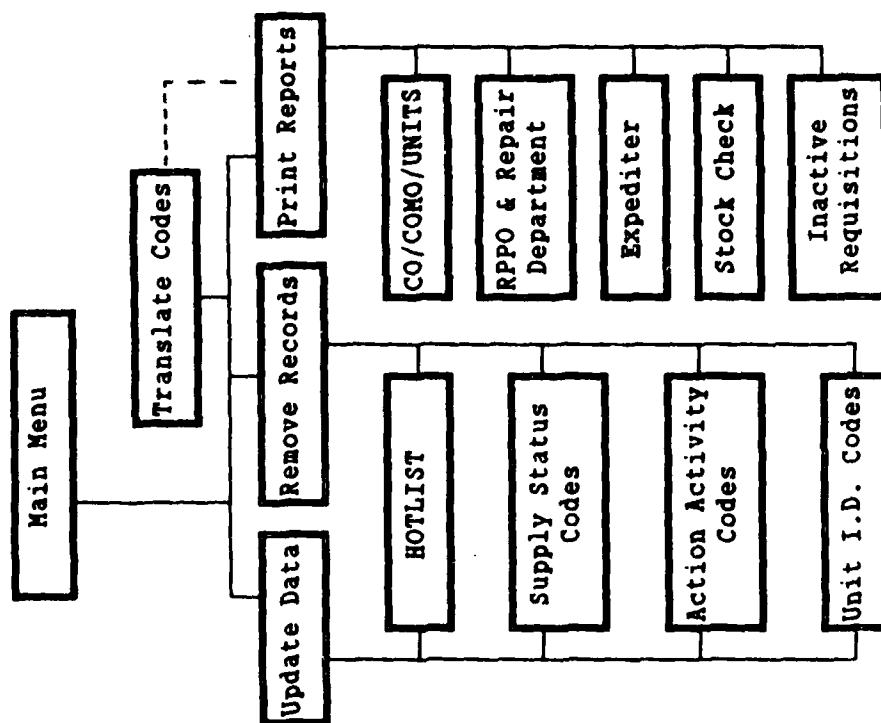
If you find that a supply code or unit identification is not translating properly, correct the code translation through the "Change or Add To Records" module (see pages 8 and 9).

When you have finished printing reports, press <0> from the menu screen to return to the Main Menu.

HOTLIST

Report Program

Desk Guide



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Vita

Lieutenant Commander Claire C. Smith was born on 23 September 1953. in Bethesda, Maryland. She graduated from Albert Einstein High School in Kensington, Maryland in 1971, and attended Widener University in Chester, Pennsylvania, where she received the degree of Bachelor of Science in Business Management and Economics in 1973. Following Navy Officer Candidate School and Naval Supply School, she was sent to London, UK, as Naval Activities Disbursing Officer and Communications Unit Supply Officer. She next was sent to Washington DC, where she completed the Business/Financial Manager Intern Program with the Rolling Airframe Missile Program in the Naval Sea Systems Command. Staying in Washington, she then held the position of Japan Desk officer in the Security Assistance Directorate of the Chief of Naval Operations. Her next tour was in the LAMPS MK III Program Office at the Naval Air Systems Command, as Contracts Specialist and Assistant Business/Financial Manager. She then took her major systems acquisition experience to the Office of the Chief of Naval Material, as an Acquisition Specialist and Special Projects Officer. She next acquired sea duty experience on the FBM Submarine Tender, USS Canopus (AS 34), undergoing a shipyard overhaul (ROH), Refresher Training, and a change of home port and relief of SITE 1. Duties on-board USS Canopus included Submarine Supply Assistance Team (SUBSAT) and Repair of Other Vessels Supply Support (ROVSS) Division Officer, Stores Officer, and Supply Management Inspection Planning Officer. She entered the School of Systems and Logistics at the Air Force Institute of Technology in June 1986.

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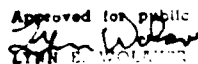
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The purpose of this study was to determine the feasibility of developing a microcomputer-based system designed for use by enlisted personnel on board a U.S. Navy FBM Submarine Tender in producing daily high-priority requisition "Hot List" reports. These reports are used for management of critical repair jobs on FBM Submarines during brief refit periods.

Management personnel from several tenders were interviewed, and a list of requirements, both administrative, and user-oriented, was developed. A software application using dBASE III PLUSSM was then developed, tested, and validated. Coding developed for this program meets or exceeds the needs identified during the interview process, and includes many improvements suggested during testing and validation.

The resulting software program is an easy to install, easy to use, data base report program designed to support all FBM tenders in the Atlantic Fleet. Program operation does not require knowledge of dBASE by the user, and entails almost no training. The program operates on a PC-compatible microcomputer with 384K RAM, one hard disk drive, one 5 $\frac{1}{4}$ " floppy disk drive, a monitor (monochrome or color), and an 80-column printer capable of using continuous form paper.

Although designed specifically for FBM Tenders, alterations to the software could allow support to a myriad of other facilities, including other types of tenders, Trident Refit Facilities, shipyards, and other repair facilities in the DOD. Improvements in both customer service and supply management could be expected in these arenas through implementation of this program.

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